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MOTOR AGE

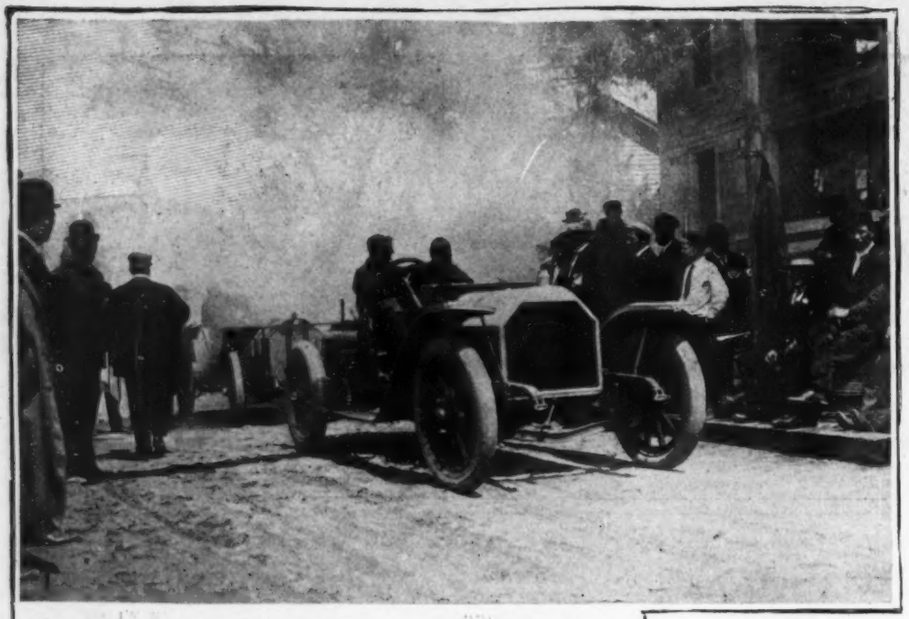
BRIARCLIFF WINNER, ISOTTA; STRANG, DRIVER

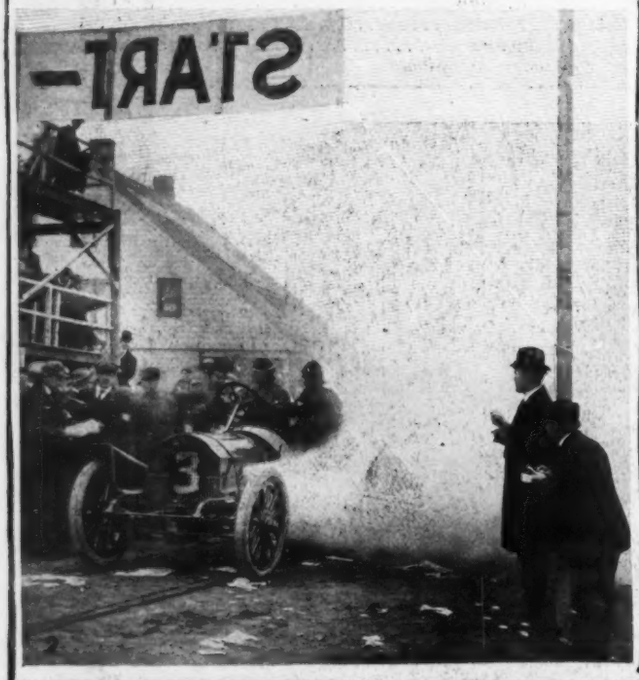
I STARTED right out from the word "Go" by Starter Wagner to win the race, and never once let up; I drove every curve the limit and got every bit of speed out of the car there was in it. I decided I had to beat Cedrino in his fleet Fiat, and if I did not beat him in the first lap I never would. From what I have seen of road racing I think a driver should not be instructed to "hold back," for a race starts from the second the "Go" signal is given; no race ever was won by holding back; so to talk of going easy for half a race and then going to make time is too strenuous on the driver, because others already have obtained a lead that is too hard to cut down unless their cars break down. There was a fog at first that was very bad, and my perfect knowledge of the road undoubtedly gave me a great advantage over the other men ahead of me, who had to "feel" their way through the mist while I drove wide open and, knowing just where the corners were, was able to shut off, scoot around, then open up again and rush onward. I caught Lytle and Sartori right after leaving East View. Cedrino already had passed these two. I passed Cedrino about 25 feet out of Pleasantville turn. Then I drove very hard for possible a couple of miles, and, after asking Marquis if everything was clear behind, I began taking it a little easier, and drove carefully from then on until the end of the race. We had a private telephone wire from the stand to a signal board at East View where I got my position and time during the entire race, so I knew just how hard I had to drive. I had no tire trouble at all, as I cut out all "grand stand" corner work, drove all corners easy and never skidded an inch at any time. My brakes were new, and the shoes wore down until they wouldn't hold, and Marquis got down on the floor boards and, leaning under the car, tightened them up until they held perfectly. A strap which we had on the back of the car came loose and threatened to run into the rear sprocket; Marquis climbed out of his seat over the gasoline tank to the end of the car and then back again, and we didn't have to stop even for that.—Louis Strang.

Pos.	Car	Driver	Time
1	*Isotta*	*Strang*	5:14:13 1-5
2	*Fiat*	*Cedrino*	5:21:05 3-5
3	*Stearns*	*Vaughan*	5:28:29 2 5
4	*Apperson*	*Lytle*	5:39:15 2-5
5	*Bianchi*	*Sartori*	5:53:45 3-5

Distance, 240 miles

Louis Strang "Isottaing" on the Tortuous Course

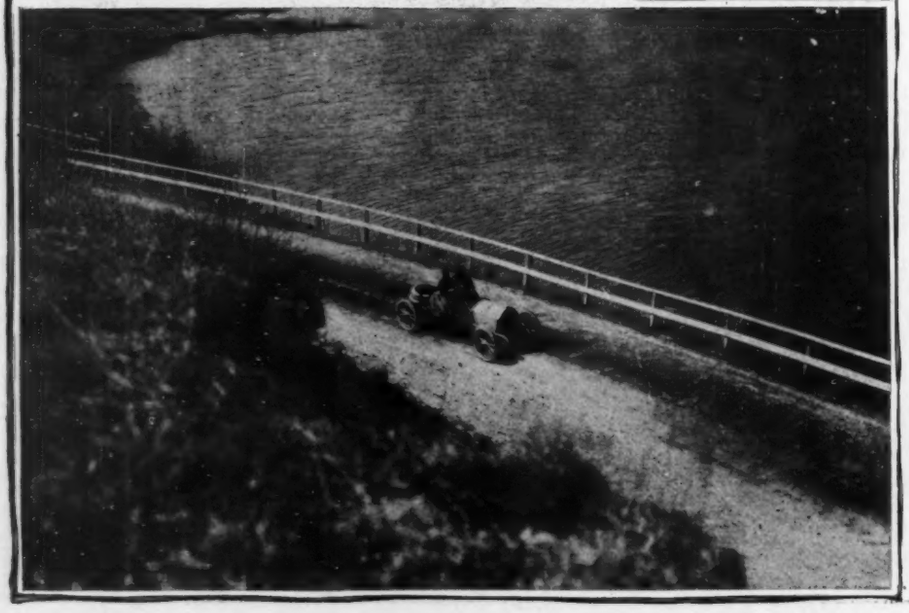




1—Vaughan entering control at Mount Kisco, with Poole at his heels

2—Lytle in the Apperson waiting for Starter Wagner's signal to begin his race

3—One of the many lakes that the course touches, Sartori passing in Bianchi



Strang Drives

NEW YORK, April 27—Louis Strang, driving the 55-horsepower Isotta-Fraschini with which he won the Savannah road race in March, added another victory to his laurels by winning the Briarcliff race over a tortuous 240-mile course last Friday, making the eight laps of the 30-mile circuit in 5 hours 14 minutes 13⅕ seconds, and maintaining an average speed of 46 miles per hour. Strang with his accustomed dash took the lead from the first lap and never surrendered for a single round, beating his nearest competitor, Cedrino, in a Fiat, by 6 minutes 52⅖ seconds. Cedrino's total running time was 5 hours 21 minutes 5⅗ seconds. Third place went to an American-made car, a 46.2-horsepower Stearns, piloted by Guy Vaughan of track and beach fame, and who in his maiden road race made a commendable showing. Vaughan's total running time was 5 hours 28 minutes 29⅖ seconds, but 7 minutes and a few seconds behind Cedrino's Fiat. Fourth honor went to Herbert Lytle, driving a 48.2-horsepower Apperson Jackrabbit, that he piloted to second honors at Savannah. His running time was 5 hours 39 minutes 15⅗ seconds. Officially fifth place was handed to Sartori, driving a 41.6-horsepower Bianchi car in that he was the fifth car to finish, and immediately after which the race was declared off by the officials. But soon after the race was declared off Frank Leland, driving a Stearns, a duplicate of Vaughan's machine, and J. Morton Seymour, driving a 52.9-horsepower Simplex, drove through the masses of cars and pedestrians on the course and finished their last laps at the grandstand in spite of the fact that all officials had departed. Motor Age representative and other witnesses were present at the stand and took the time of arrival of Leland and Seymour. Sartori in his Bianchi had a total running time of 5 hours 53 minutes 45⅗ seconds, whereas Seymour made the eight laps in 5 hours 43 minutes 20 seconds, beating Sartori by 10 minutes 15⅗ seconds, and giving him fifth place. Because of this a protest has been entered by Palmer and Singer entrants of Seymour's car, and the matter is now receiving consideration at the hands of the racing board. Sixth place, according to total running time, went to Frand Leland in the Stearns, whose total time was 5 hours 53 minutes 30 seconds, or 15⅗ seconds faster than Sartori, whom a strict time basis would be placed in seventh instead of fifth place.

The apparent reason why the Simplex, driven by Seymour, and the Leland Stearns were overlooked is that Seymour started in position twenty-one exactly 20 minutes after Sartori started, and he had this amount of time in which to finish after Sartori had crossed the tape and

A Great Race

still equal Sartori's performance. Leland carried No. 5 and started 4 minutes after Sartori, and reached the grandstand some time in advance of Seymour in his Simplex.

Giving Seymour and Leland fifth and sixth places, which they properly deserve, due to the announcement early in the race that eight cars would be allowed to finish before the race would be called off, a summing up of the seven cars which actually finished the race shows that four of these were American-built machines and three Italian cars, two of the latter driven by Italian drivers and one by the winner, Strang. Italy took first and second places with Isotta and Fiat; America took third, fourth, fifth and sixth with Stearns, Apperson Simplex and Stearns cars, and Italy took seventh with a Bianchi. Apart from this auspicious showing made by American cars, in which eleven were pitted against eleven foreign machines at the start of the contest is the more favorable report that at the end of the seventh lap fifteen cars were running in excellent shape, of which fifteen seven were American cars. It was a remarkable showing for home and foreign machines to have this number running at this point in a race over the most hazardous course ever selected for a road race in this country or abroad.

Next of importance to the wonderful car records on the course is the freedom from accident of the cars and spectators, the latter not due to any particular precautions taken by the managers of the race, but to the sense of the spectators themselves and to the peculiar physical characteristics of the course, which is a rough angular oblong lying in the New York hills a couple of miles back from Tarrytown on the east bank of the Hudson. The course meanders through the valleys, crosses many bridges, winds around water reservoirs, snakes along with small streams, loses itself on the hills and woodlands and in general indulges in those many inconsistencies so unnecessary in the course selected for road race.

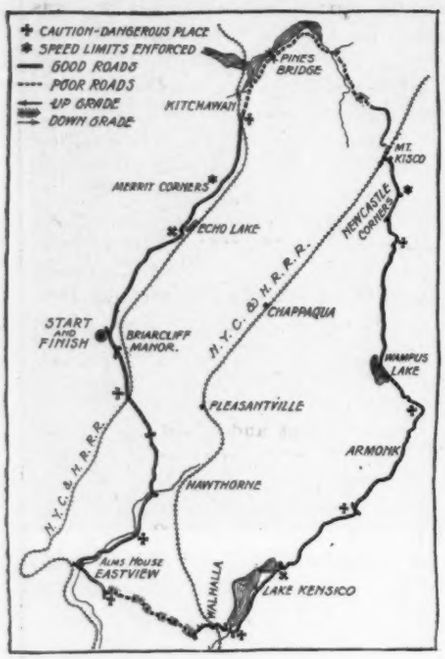
That Watson's Simplex, which upset at the Eastview corner and after repairing the steering gear continued in the race, was the only car to seriously leave the course is a marvel and reflects credit to the drivers who handled the cars. The course was dry, due to thec ontinued warm weather that in a few days previous to the race had eliminated the many mud holes on the circuit. The majority of the course had been sparingly sprinkled with oil and parts that had not been so treated were dangerously dusty. Next to thec rooked aspect of the course and its dangerous bridges was the narrow nature of it, the available roadway being too narrow to permit of cars passing in places no matter how slow the pace.

4—Straight going for a bit is encountered after passing railroad at Valhalla

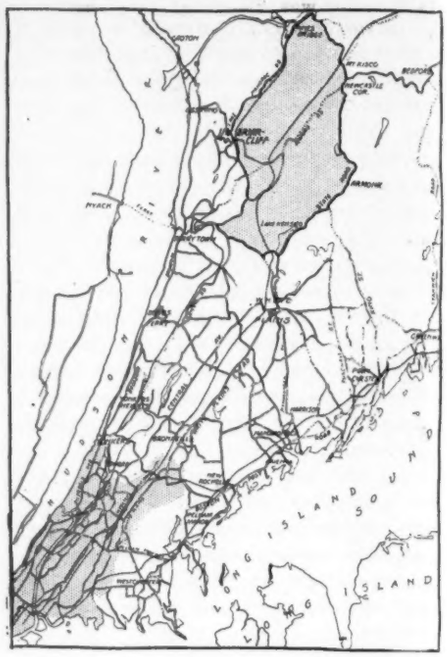
5—Leland in a Stearns waits his turn to cross the tape at the start

6—Ruts made in taking the sharp turn in the course at East View

LAP BY LAP STORY OF BRIARCLIFF RACE



OUTLINE MAP OF THE CUP COURSE



PROXIMITY OF COURSE TO NEW YORK CITY

By J. C. Wetmore

IT was not until 4:16 a. m. that Chairman Robert Lee Morrell and Secretary Thomas Francis Moore arrived at the grandstand. With the hour of the start 4:45 a. m. less than half an hour away, an appalling problem faced the promoters. Despite the fact it had been announced that the course would be closed at not later than 3 o'clock, the homestretch was packed with scores of cars, whose occupants were begging to be told how to get to the official grandstand and the parking spaces. The roadway was a mass of pushing, jostling people. Newspaper men were calling for "Schwartzy" and blindly seeking their allotted seats. Telephone men were adjusting wires and setting up transmitters, and telegraph linemen were connecting instruments. On the grandstand on the hillside above ushers with lanterns were helping early comers in their search for boxes and seats. Bands of boisterous militia marshals were pushing their way through the crowd to their stations, yelling with delight at this new lark of racecourse guarding.

Sartori, who was to be the first starter, arrived at 4:22 o'clock and pushed his way to a place near the tape. Other contestants were behind him, but swallowed up in the human maelstrom that surged through the narrow homestretch. That the start could not be made in time was certain. Whether the race could be started at all was a problem. Starter Wagner plunged into the crowd and began at once his task of getting the cars in line. He has hustled before. He never hustled and fought as he did this time. He was doing his work all right, all right.

With the time of the start but 10 minutes away, the course was a mass of seething humanity. Talk of calling off the race entirely came from the group of naturally despairing officials. Something had to be done. Harry Burchall, chief of the marshals, proceeded to do it. Calling upon his aids and appealing to a group of veterans for assistance, the struggle to clear the course began. With rushes marked by frequent hand-to-hand fights, the crowd was forced back and to the side until a semblance of a pathway was made, through which the cars might reach the starting line ahead.

A. R. Pardington, the referee, announced to the press men that the distance had been cut to eight laps and that there would be a 10-minute control through Mount Kisco for a stretch of 2.8 miles. No official measurement of the course was given out. Odometer reports had placed the length of the circuit between 32 and 33 miles, so by common consent 30 miles of racing road was accepted by all hands and the elapsed times announced were made on this basis. In a word, the eight 2.8-mile controls were eliminated in the timing. Each car was equipped with a box into which the control cards were dropped following the method employed at the controls in the first Vanderbilt cup race. Oldfield, by the way, lost his card box during the progress of the race. McMurtry saved the cards.

At 5 o'clock the roadway was at least passable, though by no means clear. The official grandstand with its 3,500 seats and 240 boxes was a little more than half filled. The bank beneath the grandstand was crowded, shutting off the view of the finish stretch from the grandstand. In fact, the grandstand folks had but a meager peep for their money. A quarter of a mile below the course curved sharply and was followed by a 100-yard climb up quite a perceptible grade. Then the racers almost immediately disappeared over the

HOW POSITIONS CHANGED DURING PROGRESS OF RACE

No.	Car	H. P.	Driver	1	2	3	4	5	6	7	8
4	Isotta		Louis Strang	1	1	1	1	1	1	1	1
2	Fiat		Emanuel Cedrino	13	6	6	5	5	3	2	2
8	Stearns		Guy Vaughan	7	4	3	3	4	2	3	3
3	Apperson		H. Lytle	2	3	4	4	2	5	4	4
21	Simplex		Seymour	3	2	2	6	6	6	5	*
5	Stearns		Leland	6	7	7	8	7	7	6	*
11	Isotta		Poole	4	10	5	2	3	4	7	*
1	Bianchi		P. Sartori	16	11	12	11	10	8	8	5
19	Isotta		Harding	10	16	14	9	11	9	9	*
7	Lozier		Michener	18	14	15	10	8	10	10	*
13	Stearns		B. Oldfield	9	8	7	14	9	11	11	*
16	Shawmut		Hilliard	14	12	13	12	12	12	12	*
18	Renault		J. Bloch	17	15	16	13	13	13	13	*
20	Benz		L. J. Bergdoll	19	17	17	16	14	14	14	*
12	Thomas		M. Roberts	20	18	18	17	15	15	15	*
14	Renault		M. Bernin	21	19	19	18	16	16	16	*
15	Panhard		G. Robertson	15	16	20	19	17	17	17	*
22	Simplex		Watson	22	22	22	20	18	*		
17	Allen-Kingston		De Palma	8	9	10	7	Ditched			
9	Lozier		Mulford	12	13	11	15	Driver hurt			
10	Maja		Murphy	5	4	9	Broke front wheel				
6	Fiat		Parker	11	21	21	Cracked cylinder				

*Running when race was called

FASTEST LAPS AND MILES PER HOUR

No.	Car	Driver	Lap	Time	Miles per hour*
4	Isotta	Strang	2	38:23	47:30
2	Fiat	Cedrino	8	36:48 3/5	49:25
8	Stearns	Vaughan	6	38:51	46:75
3	Apperson	Lytle	7	39:25	45:54
1	Bianchi	Sartori	7	41:55	42:80
21	Simplex	Seymour	6	39:16	45:50
5	Stearns	Leland	5	39:14	45:45
11	Isotta	Poole	6	39:49	45:05
19	Isotta	Harding	4	41:48	43:50
13	Stearns	Oldfield	3	41:15	41:80
16	Shawmut	Hilliard	3	45:41	39:56
18	Renault	Bloch	4	45:29	39:65
12	Thomas	Roberts	6	45:23	39:56
14	Renault	Bernin	6	46:39	38:71
20	Benz	Bergdoll	7	44:30	40:45
7	Lozier	Michener	4	42:13	41:60
15	Panhard	Robertson	1	47:48	37:60
22	Simplex	Watson	3	40:07	45:00
17	Allen-Kingston	De Palma	2	42:03	42:85
9	Lozier	Mulford	3	43:04	41:86
10	Maja	Murphy	2	40:56	43:91
6	Fiat	Parker	3	40:31	44:44

*Thirty miles to lap

top of a hill beyond the start. The conditions at the stand were bad and apparently nothing was known of how matters stood at other parts of the course. It was a gamble with fate, yet it was decided to cast the die, though "Wag" protested vigorously against the risk of a sendoff being yet taken. At this moment two ambulances ominously drove up and took their stand by the roadside.

The race was started at 5:07 o'clock, "Wag" counting Sartori away first and dispatching the others at 1-minute intervals. All the drivers had friends to cheer them, but Barney Oldfield proved the prime favorite with the general public, though the fraternity seemed to take the most interest in Strang, Cedrino and Vaughan. Bergdoll toed the scratch with no tool box, but on the showing that he carried a full equipment of tools he was allowed to start.

The first bulletin that Peter Prunty bawled through his megaphone was that Oldfield had passed Roberts at the railroad crossing. Roberts had started just a place ahead of Oldfield. There had been considerable side betting between the followers of the two, so this information was interesting. Vaughan got by Michener at Armonk, and Cedrino passed Sartori at Valhalla and led the procession. About this time the crash of an ax against wood behind the stand attracted attention. The sheriff was raiding the shell game camp that the nimble-fingered gentry had pitched.

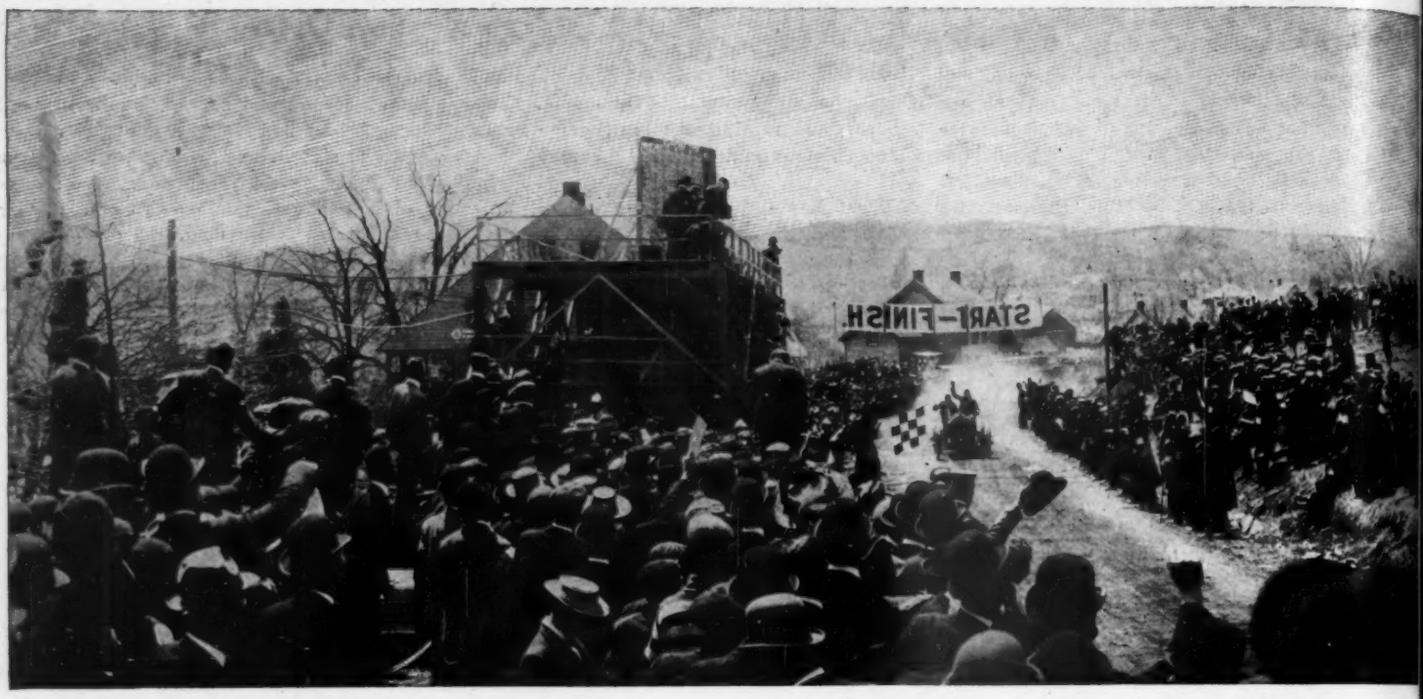
First Lap—All this time Wagner, Burchall and the whole outfit were fighting with the crowd to clear the course for the return of the racers. The megaphone bulletins had told that the leaders were nearing the stand, apparently well bunched. All eyes were directed toward the sharp turn at the foot of the hill. In a minute a red car dashed around it and up the hill. This was at 5:49:42, or 42 minutes 42 seconds from the start. It was the Savannah cup winner, Strang. In a single lap he had got by Lytle, passed Cedrino and disposed of Sartori, making the round in 39 minutes 42 seconds. In 18 seconds Lytle shot by in second place. Just behind him came Sartori. The latter's Bianchi was plunging from side to side and stopped at the foot of the hill with a punctured tire. Cedrino and Leland completed the lap in order before Sartori had replaced his tire and got under way again Strang was out for a runaway race of it, such as had brought him victory at Savannah. Seymour had made a splendid run from the start with the Simplex and was actually second and but 14 seconds behind Strang. He had fought his way from twenty-first in line at the start to the fourteenth place in the procession. Lytle was third in the race and Poole fourth. Harding, the third Isotta man, had put on two new tires and replaced spark plugs and yet had managed to climb from nineteenth to tenth place in the race. The first and most serious accident in the race occurred in the first lap. Watson by reckless driving overran the corner at East View. He and his mechanic, Cotter, were thrown out, but only slightly injured. Watson pluckily set to work to mend the bent steering post and wheel and in less than 3 hours had his car running again, so that he was timed for five laps in all. Michener came to grief just where Sartori did and lost 4½ minutes putting on a tire at the foot of the homestretch hill. Harding in this lap made a 3 minute tire replacement in front of the stand.

Second Lap—The order of the five leaders in passing the stand on the second lap was little changed. Strang, Lytle, Cedrino and Leland. Cedrino, though, had been

TABULAR STORY OF THE 240-MILE RACE FOR BRIARCLIFF TROPHY, APRIL 24, 1908

No.	Car	H. P.	Owner	Driver	1	2	3	4	5	6	7	8
4	Isotta	55.1	J. H. Tyson	Strang	39:42	38:23 78:05	39:18 117:23	38:39 155:22	38:38 194:00	40:24 234:24	38:43 273:07	40:26 1-5 313:33 1-5
2	Fiat	48.4	Fiat Co.	Cedrino	45:01	40:03 85:04	40:09 125:13	44:44 169:57	39:35 209:32	37:29 246:21	37:16 283:37	36:48 3-5 319:85 3-5
8	Stearns	46.2	W. C. & P.	Vaughan	42:12	40:15 83:27	39:43 121:70	43:56 165:26	41:50 207:16	38:51 246:07	38:52 284:59	42:50 2-5 327:49 2-5
3	Apperson	48.4	S. B. Bowman	Lytle	41:00	40:47 81:47	42:01 123:48	43:11 166:59	40:36 207:35	40:36 247:31	39:25 286:56	51:39 2-5 338:35 2-5
1	Bianchi	41.6	Percy Owen	Sartori	48:15	43:14 91:29	44:29 135:58	47:05 183:03	44:31 227:34	42:17 269:51	41:55 311:06	41:59 3-5 353:05 3-5
21	Simplex	52.9	Palmer & Singer	Seymour	39:56	40:31 80:27	40:05 120:32	51:48 171:40	39:56 211:06	39:16 250:22	39:28 289:50	.....
5	Stearns	46.2	W. C. & P.	Leland	43:16	42:01 85:17	41:24 126:41	49:49 178:30	39:14 217:44	45:06 262:50	40:13 303:03	.....
11	Isotta	55.1	Isotta Co.	Poole	41:03	44:54 85:57	41:03 127:00	40:59 167:59	41:51 209:50	39:49 249:39	54:41 294:20	.....
19	Isotta	55.1	Isotta Co.	Harding	43:54	51:31 95:25	43:14 138:39	41:48 179:47	47:09 126:56	42:46 269:42	43:41 313:23	.....
13	Stearns	46.2	W. C. & P.	Oldfield	43:47	41:39 85:26	41:15 126:01	59:57 185:58	43:15 229:13	50:46 279:59	46:59 326:58	.....
16	Shawmut	36.8	Hol-Tan Co.	Hilliard	46:00	46:04 92:04	45:41 137:45	45:55 183:00	47:48 230:48	46:39 277:27	50:07 327:34	.....
18	Renault	44.1	Paul Lacroix	Bloch	48:16	45:48 94:04	46:54 139:18	45:29 184:47	49:34 234:21	47:19 281:40	47:04 328:44	.....
12	Thomas	52.9	Harry S. Houpt	Roberts	52:35	50:13 102:48	50:17 153:05	49:07 202:12	47:20 249:32	45:23 294:55	47:31 342:26	.....
14	Renault	44.1	Paul Lacroix	Bernin	59:38	49:23 109:01	47:48 156:09	46:40 202:49	50:37 253:26	46:39 300:05	69:56 370:01	.....
20	Benz		L. J. Bergdoll	Bergdoll	52:02	45:18 97:20	44:38 141:58	52:20 194:18	44:27 238:45	45:20 284:05	44:30 328:35	.....
7	Lozier	44.1	Lozier Co.	Michener	48:30	44:37 93:07	46:21 139:28	42:13 181:41	42:14 223:55	47:49 271:44	.....	.....
15	Panhard	48.6	Panhard Co.	Robertson	47:48	62:44 110:32	52:38 163:10	60:20 223:30	55:35 279:05	48:56 328:01	.....	.....
22	Simplex	52.9	Palmer & Singer	Watson	177:31*	46:40 224:01	40:07 270:41	41:52 312:33	40:44 264:14	Still running	.....	.....
17	Allen-Kingston	40	W. C. Allen	De Palma	43:33	42:03 85:36	44:41 130:07	42:54 173:01	Ditched and bent front axle Driver slightly hurt			
9	Lozier	44.1	Lozier Co.	Mulford	44:17	48:16 92:33	43:04 135:37	54:59 190:36	Ditched, breaking front wheel	.....	.....	.....
10	Maja	30	J. J. Brown	Murphy	41:31	40:56 82:27	44:49 127:16	.....	.....	.....	.....	.....
6	Fiat	48.4	Fiat Co.	Parker	44:09	72:12 116:19	40:31 156:50	.....	Cracked cylinder	.....	.....	.....

* Overturned on first lap, putting steering gear out of commission



PANORAMIC VIEW OF FINISH OF THE BRIARCLIFF RACE SHOWING LOUIS STRANG IN ISOTTA-FRASCHINI AS HE RE

passed by Vaughan and Murphy. The latter, by the way, was making a remarkably good race with the little Maja, the lowest-powered car in the race. In actual time Strang led Seymour by about 2 minutes, with Vaughan third and Lytle fourth. Strang was rapidly pulling away from his pursuers, a trio of American cars. The home product was showing up splendidly against the foreign cars. Strang had covered the second lap in 38 minutes 23 seconds net, his fastest in the race. Word now came that the planks on the bridge across Murray's creek were loose and dangerous. A carpenter was hurried to the spot with new beams. Another interesting bulletin was to the effect that a cable from the London Surety Co. had been received stating that the protesting Greenburg, which threatened to stop the race, had been included in the indemnity bond. Robertson, from whom much had been expected with the mighty Panhard, had had tire troubles to burn and had fallen far toward the rear. Roberts, too, was greatly disappointing his admirers. Oldfield, a sensation-maker by profession, had a narrow escape from being wrecked by a train at Kitchawan, the cow-catcher, so the story has it, actually lifting one of his rear wheels. Bernin's magneto came loose and cost him a delay of 12 minutes before it could be readjusted and the start made.

Third Lap—Strang continued his daring runaway tactics and gained still another minute on Seymour in the third round. Vaughan and Lytle were having a hammer and tongs duel of it, and at this point the Stearns driver had a bit the better of the Jackrabbit. Minute intervals separated Seymour, Vaughan and Lytle. Poole, who had a lot of trouble in the second lap with his spark plugs, just as he did at Savannah, got under way again with a vengeance and fought his way from tenth to seventh place. How well Vaughan was going may be judged from the fact that he managed to hold third place in the face of detention at Wampus lake to replace a tire. Oldfield was also going well with a lap in 41 minutes 15 seconds. In fact, the track champion was proving himself a fair road man.

Fourth Lap—Seymour dropped back from his place as runner up to the leader in the next lap, letting Lytle and Vaughan into second and third positions, respectively. The Simplex crack had been detained 13 minutes at Mount Kisco, owing to the grease cup on his clutch having run dry. Strang, the leader, opened a gap of 10 minutes on Vaughan, his nearest pursuer. The new American premier was going at wholesome speed, each of the four laps having been done under 40 minutes, a feat approached so far by but one of his rivals, Seymour, and that in only one lap. Barring accidents thus early he looked like an easy winner. In this lap two cars were eliminated from the contest. Murphy, who had been making a fine showing with the Maja, having been at one time in

POOLE KICKS UP DUST AT COLONIAL TURN AT KITCHAWAN
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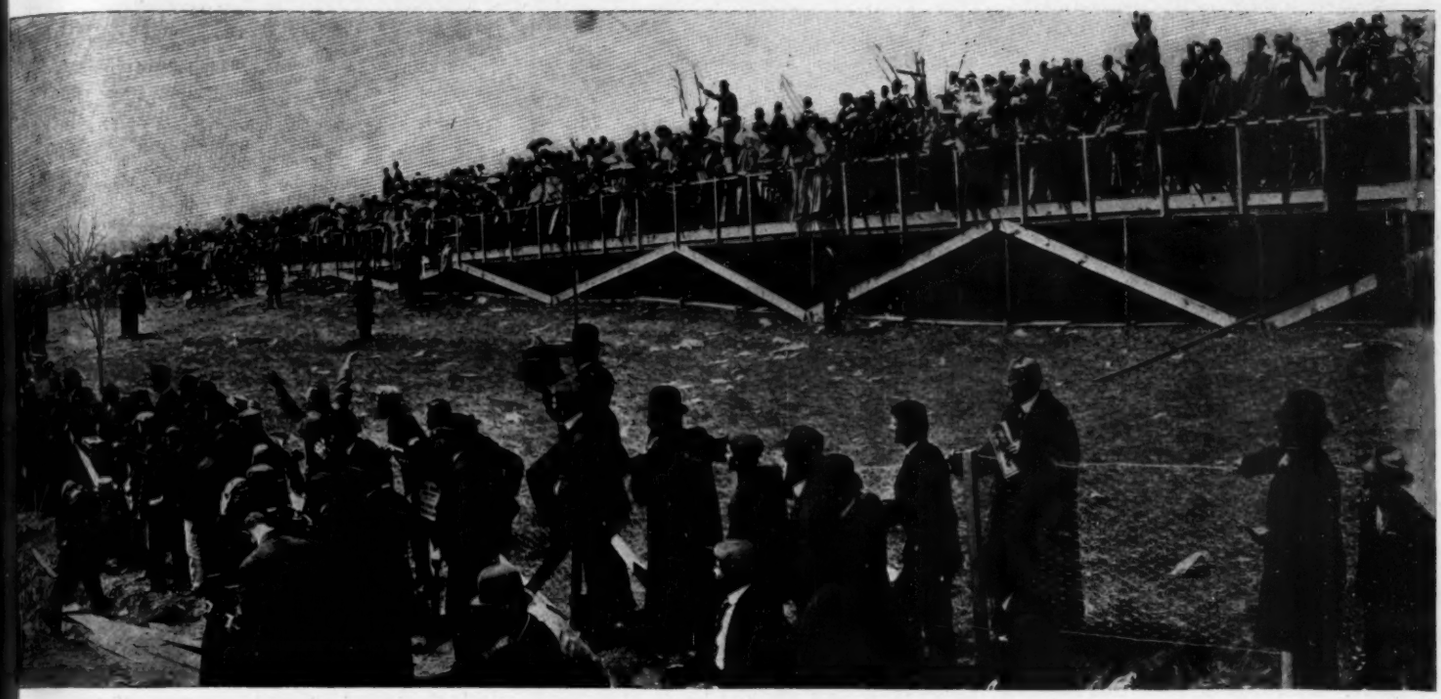


UNDER WIRE FOR THE LAST TIME—CROWD BECOMES ENTHUSIASTIC AND MECHANIC MARQUIS WAVES A RESPONSE

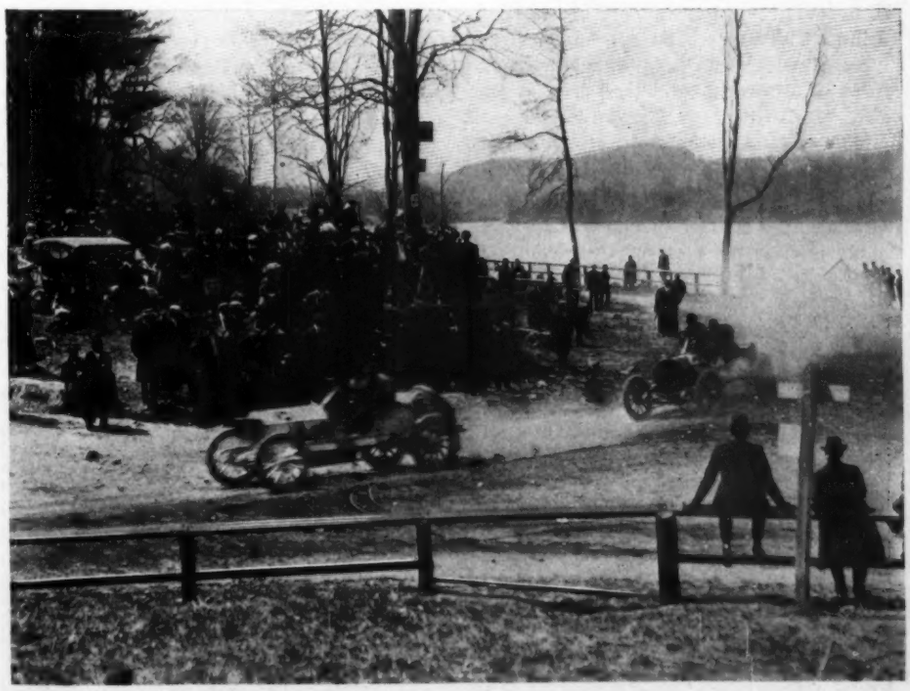
fourth place, ditched his car and put it out of the running with a broken front wheel. Parker's Fiat ceased from strife with a cracked cylinder and a broken rocker arm. This was the fastest lap for several of the racers: Harding, 41 minutes 48 seconds; Michener, 42 minutes 13 seconds, and Bloch, 45 minutes 29 seconds.

Oldfield's gasoline feed became clogged and his motor stopped. He had lost all his tools and was practically helpless. Finally the gasoline filtered through, the obstacle having been discovered.

Fifth Lap—Cedrino, the Fiat pilot, now woke up and began the fast and well sustained run, which finally landed him in second place. The close of the fourth round had left the betting favorite in the race in fifth place. Having stopped to replenish fuel, he was prepared for a great effort. He certainly did make it and make good with it, too, for he covered the 30-mile circuit in 39 minutes 35 seconds and got by Poole, who had led him a couple of miles the preceding lap. He was now right on the heels of Lytle and Vaughan. The uncatchable Strang, however, was 12 minutes ahead of Lytle, his nearest pursuer. De Palma ditched the Allen-Kingston and hopelessly bent the front axle of his racer.

Sixth Lap—A desperate hair-raising race was now on between Cedrino and Vaughan. In the duel between the two, Lytle was left behind and Strang's lead was considerably cut. The Italian put up a lap in 37 minutes 29 seconds. The blond New Yorker responded with a circuit in 38 minutes 51 second and retained his second place by the narrow margin of 15 seconds. Strang had slowed down to 40 minutes 24 seconds, yet still had over 11 minutes margin in case of accidents. Lytle, Poole and Seymour were fourth, fifth and sixth at 1-minute intervals. Sixteen minutes separated the first and sixth men. Michener ran 2 miles and through the Mount Kisco control as well on a flat tire.

Seventh Lap—Strang without doubt now had the race well in hand, but not so surely that he could let up from the fast gait he had set and maintained from the start. Behind him Cedrino was driving like a wild man and eating up the intervening space with every bound. Faster and faster flew the Fiat. It had gone very fast in the fifth round, faster still in the sixth, and in the seventh there was still another kink of speed for Cedrino to let out. It was one of the most remarkable pursuits and gamest stern chases in the whole history of motor racing. The Italian scored 37 minutes 16 seconds for the seventh round, an average of about 48 miles an hour, a marvelous gait over such a course. He cut down Strang's lead from 11 to 10 minutes, though the Isotta crack had been going some himself with a lap in 38 minutes 43 seconds. Vaughan, Lytle and Seymour were at Cedrino's heels as long distance racing goes, and having a glorious



CEDRINO WITH FIAT OVERTAKES HILLIARD AT CROTON LAKE

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CEDRINO IN THE FIAT AT THE PINE BRIDGE S TURN

triangular duel among themselves, Vaughan a minute and a half, Lytle 3 minutes and Seymour 6 minutes behind the Italian, intervals that might easily be altered by a spurt or a slight accident. There was to be seen little chance for Cedrino to catch Strang, but there was a mighty good opportunity for Vaughan, Lytle and Seymour to overtake Cedrino and to shift their own relative positions considerably. Michener lost a tire. This made three punctures in all, each one occurring when he was far from any tire control.

The Finish—The megaphone bulletins of the passing of the cars at the various points now became intensely interesting and in fact vital. Reports from Mount Kisco, Armonk and Valhalla told of the passing of Strang and Cedrino in order. Then came the final word from East View and the home stretch had been reached. Five minutes of excited suspense and the red Isotta swung around the last corner with a mighty skid and thundered up the hill to the finish line, winner of the race in 5 hours, 14 minutes, 13⅕ seconds. Cedrino's Fiat was second in 5 hours, 21 minutes, 5⅗ seconds. Vaughan's Stearns was third in 5 hours, 28 minutes, 29⅖ seconds. Lytle, Apperson, was fourth in 5 hours, 39 minutes, 15⅖ seconds. Sartori, Bianchi, was fifth in 5 hours, 53 minutes, 45⅗ seconds. The crowd was uncontrollable and swarmed the course. Though it had been announced at the close of the seventh lap that eight cars would be permitted to finish, Chairman Morrell, seeing danger imminent, told the telephone men to phone for the hanging out of the yellow flags. Despite the crowd on the course Seymour managed to cross the line with the Simplex within 3 or 4 minutes, preceded by Leland. Had they been officially timed both would have beaten the Bianchi, which would have been thus put back into seventh place, as it started 20 minutes ahead of the Simplex and 4 minutes before the Stearns. Strang, the winner, averaged 46:15 miles per hour. The fastest lap in the race was made by Cedrino, who covered the last round in 36 minutes 48⅗ seconds, an average of 49:25 miles per hour. The final round brought quite a harvest of mishaps to the racers. Lytle had a tire blowout and two spark plugs blew out, all within 4 miles. Vaughan and Leland both had blowouts, the former one and the latter two.

REWARDS FOR THE WINNER

There always is a vast deal of glory for both car and man in crossing the tape victorious in a big road race, but this is not the most substantial reward that the drivers of the first cars receive by any means. For instance, Strang received a bonus of $1,000 from his employer, J. H. Tyson; $500 from the Michelin Tire Co.; $100 from the Hess-Bright Mfg. Co. and $100 from Lavaletter & Co., his winning Isotta having been equipped with Michelin tires, Hess-Bright ball bearings and the Eisemann magneto. Another prize, previously announced as $100, was raised to $200, by the Hartford Suspension Co., the winning car having been equipped with its shock absorbers.

Strang, who followed up his victory in the Savannah race by winning the Briarcliff, is to represent this country in the grand prix. Harry S. Houpt, acting for the E. R. Thomas Motor Co., has secured his services and those of his mechanic, J. B. Marquis, as crew of the Thomas candidate for international honors in the great contest in France on July 8. Mr. Houpt will sail with Strang and Marquis tiee. The securing of Strang and Marquis was made possible through the generous and sportsmanlike conduct of J. H. Tyson, with whose Isotta car they won both the Savannah and Westchester races, in granting them a leave of absence for the purpose. Two Thomas cars will be sent over. Strang and Marquis will go to the E. R. Thomas Motor Co.'s factory at Buffalo to look them over before their shipment and incidentally familiarize themselves with Thomas construction. It is said A. L. Riker had made advances to Strang with a view to getting him to pilot a Locomobile car, which he thought of entering under the double fee provisions of the rules as to late nominations. Whether Mr. Riker will persevere in his plan to have the Locomobile company represented in the grand prix, either persuading Joe Tracy once more to take the wheel or securing some other driver, is unknown.

SHOWING ONE OF THE BADLY WORN TURNS AT STAND

INFORMATION BOARD AT A TURN

RACE FROM DRIVERS' VIEWPOINT

WATSON, SIMPLEX, TURNING AT EAST VIEW

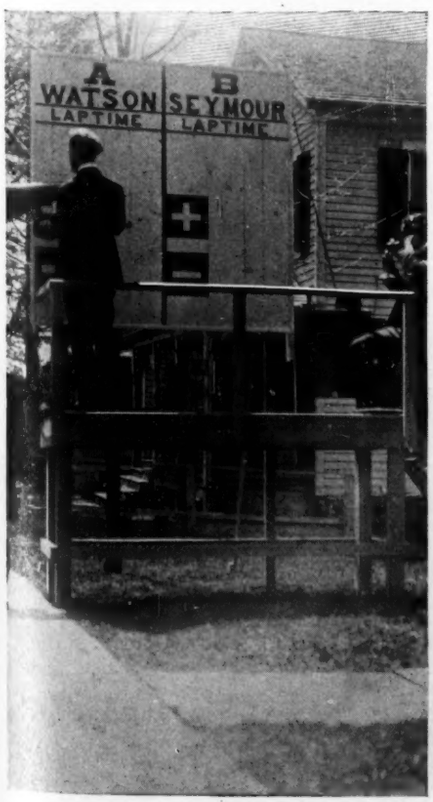
IF the Briarcliff race proved nothing more than that the running gears and steering mechanisms of the various cars were competent to stand up under a 240-mile ordeal over roads that abound in snake curves, twists around water ponds, crooked ascents and descents and poor road surface it was a success. Never in any road race have cars been treated to such hardships and any eye witness of the event would be safe in picking any of the twenty-two contestants at random as far as securing a car with a safety factor in running gears and steering parts. To test the steering mechanisms were the seventy or more turns per lap and many of these curves at the start of the race were but a couple of arc-shaped furrows in which furrows the drivers had to guide the two front wheels of the car or run the danger of upsetting by overrunning the corner, as Watson did. By the end of the race these furrows assumed amazing proportions, the road surfacing material having been cut away and scattered into the bordering ditches. On some of the tortuous stretches the afternoon before the race were parallel ruts which the cars had to follow or slow up and the dangers of these places were augmented by the strain they placed upon steering gear connections and parts.

Then, too, the springs had to take their share of the rough usage and thanks to the use of shock absorbers not a broken leaf or shackle was reported at the conclusion of the race. This is a great encomium to springs and if such materials are used in future Glidden tour springs there should not be last year's tales of not only one broken leaf but every leaf in a spring being fractured.

Before enumerating what did and what did not happen to the many cars it must be said in due regard to all the contestants that when many makers are entered they should be assured of having an opportunity to finish the race if they are at all up in the running towards the end. As it happened the race was called off after five cars had finished in spite of the fact that fifteen cars had completed the seventh lap and were running at some point or another on the last lap. The disappointment to a driver who is rushing his lap to see the yellow flags displayed is extreme, as was shown by Seymour and Leland, both of whom, in spite of constant streams of motor cars and swarms of people on the course, worked their way up to the grand stand and finished the race, although the timers and all other officials had disappeared long before. There is more honor in finishing eighth than not getting a chance to finish at all, and of the fifteen drivers who were on the course at least half of them should have been given the chance to cross the finishing line. Too early stopping of a race generally occurs due to fear on the part of the promoters that the crowd will swarm on the course after the leaders are through, but there was not a bit of evidence in the Briarcliff to warrant such assumption, the crowd seeming content to wait without trouble until the finishing of the eighth car, as was announced.

Vaughan Hits Hard Luck

Although a tale of woe attaches to practically every contesting car but Strang's winning Isotta, yet the bulk of the troubles were due to tires, spark plugs melting and blowing out, gasoline leads choking, and little oiling troubles. Vaughan in his 46.2-horsepower Stearns might have been closer than third position had it not been for tire difficulties. The loss of two tires caused the trouble. Cedrino beat him 7 minutes 23⅘ seconds, whereas a study of his tire troubles shows that Vaughan lost almost 10 minutes due to such. On the third lap he had to replace the rear tire at Wampus lake. As it was this lap was a speedy one, being negotiated in 39:43, there being but two faster to his credit, laps six and seven, made respectively in 38:51 and 38:52. Speaking roughly and neglecting seconds he made a good showing, having such minute lap-figures as 43, 42, 42, 41, 40, 39, 38 and 38. He passed the stand on the final going at a good pace, but had hardly cleared the brow of the hill above the grand stand when the front left tire blew out. Quick work was done in replacing this, the total loss being about 4 minutes, as shown by a compari-



ONE OF SIGNAL STATIONS

SARTORI IN BIANCHI ON THE EAST VIEW CORNER

PARKER'S FIAT BEFORE ITS MISHAP

CEDRINO CATCHING A RIVAL NEAR KITCHAWAN

son of the lap performances. Lytle's delay in the Apperson insured Vaughan third place, but without the delays incident to tire troubles he would easily have made second, as is shown by the fact that Cedrino was but 7 minutes ahead at the finish, in spite of the Italian's daredevil driving on the last three laps, which were the fastest of the race, all being under the 40-minute mark.

Lytle's Tires and Plugs

Lytle ran in hard luck. He had Cendrino beat at the end of the sixth lap by 14 seconds, but Cendrino's last two laps were too fast for him. Lytle started out with 41 seconds for the first lap, cut it 13 seconds to 40:47 for the second, made the third in 42:01, took 43:11 for the fourth, cut to 40:36 for laps five and six, made the seventh in 39:25, his fastest for the race, and lost out in the last, taking 51:39 3-5 for it.

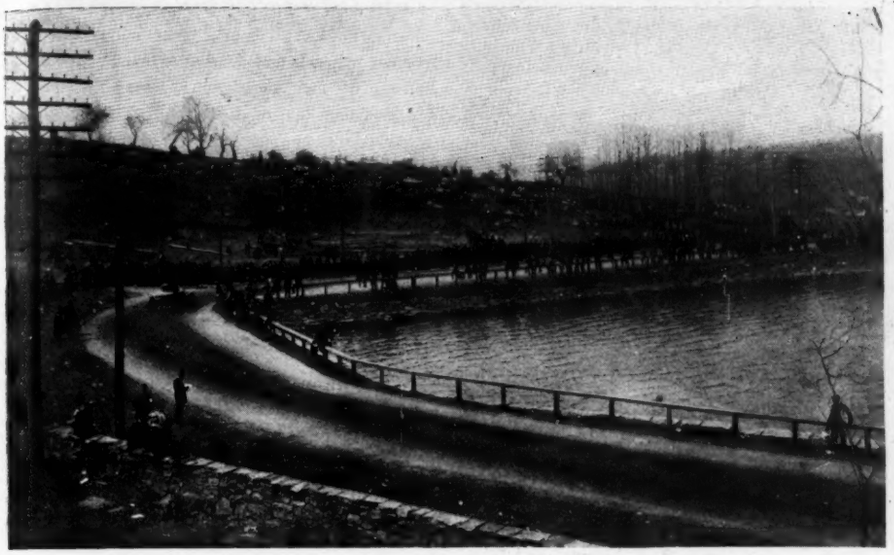
His little car reeled off the miles like a watch—nothing phenomenal in the way of speed, but demonstrating by every lap that it was displaying in the most striking manner those very qualities which the race was designed to bring out. Lap after lap, it passed the stand with its times for the round but a few seconds apart, while the fifth and sixth laps were covered in identically the same time to a second, Lytle taking 40:36 in each case to cover the thirty odd miles, while between the times of the first and second laps there were but 13 seconds.

Lytle started third and ran so regularly that the Apperson was generally believed to have third at the finish pretty heavily mortgaged, as the Apperson had a clear lead of several minutes over Vaughan's Stearns at the opening of the last lap. But the little things had not been reckoned with. Lytle's Diamond tires, which had borne up under the terrific strain without a sign of weakening up to the time, stood the test until the last half of the last lap, when the right rear gave up the ghost between Armonk and Valhalla. The Apperson crew certainly had no cause for complaint on the score of tires, but what little trouble did fall to their lot came upon them at a most inopportune moment. But Lytle still had a comfortable hold on third, even after replacing the damaged tire, and would have had no difficulty in getting home in that position with a good margin if the same evil genius had not continued to pursue him. Immediately after replacing the tire the engine began to sputter and an examination showed that the ignition current from the magneto had been too hot for the points of a spark plug. The offending plug was replaced, and after running a mile, the process had to be repeated, while a third stop had to be made for the same cause, three plugs being replaced, in addition to the tire replacement, all within a distance of 3 or 4 miles on the last half of the last lap of the race.

Seymour's Oil Trouble

Seymour, the unofficial fifth and official "nothing" drove a most consistent race with the exception of lap four, when a grease cup gave trouble. He made four laps in 39 minutes and a few seconds each; two laps in 40 minutes and 5 and 31 seconds, respectively, but took 51:48 for the fourth and 52:10 for his "unofficial" eighth, during the last one-third of which he drove through roads crowded with motor cars and people. Even with such conditions he beat out Sartori in his Bianchi by 10 minutes 15 3-5 seconds. Seymour lost more than enough time to prevent him from scoring well, through one of those petty little things that is all the more exasperating owing to its very simplicity. The grease cup on the clutch collar of the Simplex ran dry and the clutch heated so that it could not be disengaged. This cost Seymour 13 minutes on the fourth lap. But even at that, he might still have scored had not further and equally simple and aggravating mishaps caused more time to be spent in fussing instead of covering the distance at the good clip which the Simplex maintained throughout the race. Nearing the latter half of the last lap, the piece of hosepipe

CROWD AT START, SHOWING GRAND STAND IN BACKGROUND



AN INTERESTING SPOT—SKIRTING LAKE KENSICO

connecting the radiator and the pipe on the motor loosened and let the water escape. This was quickly made good, but Seymour then found himself on the wrong side of a railroad train at the crossing about half way between the Apperson and Simplex camps. Trains moved so rapidly on race day that this little coincidence cost another 5 minutes—just enough to prevent coming in fifth—that is, officially, as even, in spite of these numerous handicaps, his total running time taken unofficially entitled him to that position.

Leland's Gasoline Setback

Frank Leland in his Stearns, who was "unofficial" sixth and official nothing, made a game race from start to finish. Unofficially he beat Sartori out 15 3-5 seconds. At the end of lap seven Leland led him by 10 minutes 43 seconds, but required 52 minutes 27 seconds for the last lap, just 17 seconds longer than Seymour, with whom he shared the ill fate of having to drive the last part of the eighth lap over crowded roads. The time for Leland's eight laps were: 43:16, 42:01, 41:04, 50:09, 39:14, 45:06. 40:13 and 52:27.

His main delay was due to gasoline trouble. On the last lap he was stranded far from any supply depot without any more gas. The owner of a Winton touring car volunteered a replenishment, but the only means of transfer consisted of empty beer bottles so that, the process was not a rapid one. Fourteen minutes were lost in this manner, in addition to which Leland also suffered one puncture in the fourth lap, which cost him 5 minutes, and two blowouts in the fifth lap just before arriving at the Mount Kisco control and wasting another 5 minutes each, so that his delays totaled practically half an hour. After the race was over Vaughan found that he had also had gasoline trouble, the fuel leaking away from the auxiliary tank about as fast as it was being used from the main tank. Figuring the delay that this cost him, together with the others already chronicled, it will be seen that the "No. 8" Stearns was the most dangerous competitor that Strang had.

The performance of Leland was a pleasant one in comparison to the hard luck he drove against in two of the recent Savannah races ,when he finished in neither. History will record the performance of the three Stearns cars as one of the very meritorious features of the Briarcliff race.

Loziers Have Tire Stops

Although it was true that tire troubles alone were not responsible for the delay, some of the drivers had far more than their share, as witness the experience of Michener and Mulford of the Loziers, Nos. 7 and 9. Thus Michener had to replace three tires and Mulford had to make four good, in addition to a later mishap to his mechanic which put him so far behind that it was useless to continue. Michener was unfortunate in having to replace every one of his damaged tires far from any of the outside assistance that the rules permitted where tires were concerned. On the first lap, a rear went bad right near the stand, costing 6 minutes. Later he ran 2 miles on a flat tire, then through the control at Mt. Kisco, and fixed it as soon as he was checked out, this being on the sixth lap, while on the seventh he lost another. A loose cotter pin in the clutch pedal connection, which was fixed at the Lozier camp, also cost him 2 minutes.

Mulford probably had more tire trouble than any other two drivers put together, as he had to replace a tire in each one of the four rounds that he made. All of them were rears, and cost him 4 to 6 minutes each. In attempting to start the car on the fifth round, after having replaced the last tire, Mulford's mechanic must have neglected to retard the spark, as he was rewarded with a back kick that threw him several feet into the air. Landing on his head on the road he was knocked unconscious, and as there was no one there at the time, Mulford naturally had to wait until the arrival of the ambulance. So much time was lost in this and bringing the man round that there was no hope of gaining a place.

COURSE AS SEEN FROM GRAND STAND

SHAWMUT ENTERING MOUNT KISCO CONTROL

MONTAGUE ROBERTS IN THE THOMAS RAISES SOME DUST

The two white Loziers were of the shaft driven type, a line of cars brought out this year for the first time by this company. As they flashed by the grand stand a spectator could not but note how well balanced they were and how excellently they held the road.

Oldfield Loses Juice

Oldfield in the Stearns with the "No. 13" "hoodoo," found his bad luck in the fourth lap. During the bouncing and swinging round curves, his tool box had flung open and lost practically its entire contents, so that while on Valhalla hill, just after having passed the Bianchi, a stoppage of the motor placed him in a peculiar dilemma. It proved to be an obstruction in the gasoline feed line from the tank, but there was nothing to remedy it with. A few minutes' wait sufficed to allow enough gasoline to filter through to run a mile or so, and then there was another wait. This was repeated three times until the Stearns camp was reached, when the aid of a pair of pliers served to make things good. In the fourth or fifth lap no less than three tires went flat, one of them while passing through the Mt. Kisco control. These took 2 or 3 minutes each to replace, while the gasoline pipe wasted 20 minutes. Oldfield made the grand stand play of the day when on lap four he passed Harding at the grand stand turn, while four cars were bunched.

Maja's Defective Wheel

Murphy, driving the sporty-looking little Maja, "No. 10," was certainly the victim of circumstances over which he had less control than did his competitors who suffered from delays caused by trouble occurring during the course of the race. His mishap originated some time before the race and was due to the manner in which the wheels of his car were rebuilt by a local maker in putting the dismountable rim attachments on them. According to Murphy, who attracted universal admiration on the back stretches by the skill with which he handled the little car on the curves, the wheel was rebuilt with a felloe of several pieces of soft wood, instead of two sections of hard wood bent into form. Coming round the curve at Hawthorne corner, the wheel simply collapsed, the spokes being so loose that they pulled right out, while the felloe split. He also had the misfortune to have the right front tire blow out on the third lap.

DE PALMA IN ALLEN-KINGSTON DASHES ACROSS A RAILROAD TRACK

Shawmut Runs Well

The little Shawmut handled by Hilliard, which was only put in 3 days prior to the race, after having come over the road from Boston in record time, was another "scheduler" that showed surprising regularity of performance, not to mention lap times, that, in many instances, bettered those of their far more powerful competitors by several minutes. Considering the very short time that had been allowed for getting the car in shape, as its only running-in, outside of the usual factory test, consisted of 3 days on a stand in a garage, and the fact that Hilliard had hardly an opportunity to practice, much credit is due the car as well as the skillful manner in which it was handled. Its only stop was to replenish the gasoline tank, taking 1½ minutes, while it averaged 46½ minutes to the lap, the slowest being 49 minutes, which, according to Harry Fosdick, who laid out a running schedule in advance, bettered original calculations by not including a stop to change all four Continental tires as had been planned, so that the only divergence from the time-table was a single stop instead of two.

Renault's Troubles

In view of the unprecedented nature of the course on which they had to compete, many of the drivers figured out a schedule for themselves and stuck to it religiously, despite the temptation to speed a bit when it became evident that schedules did not win races, though they were striking evidence of regularity and reliability. Bernin and Bloch, in the two Renault cars, were good examples of this, the former losing 12 minutes on the second lap through a loose magneto, which sums up the entire troubles of both of the Frenchmen. They suffered no other delays either from their Michelin tires or mechanical causes, plugging their way round steadily at a good average pace.

Strang Not Exempt

There was a prevailing general impression that Strang and his Isotta went through without a single stop, but this was not the case, as even the winner had troubles, too. On the sixth lap a stop had to be made at the Mt. Kisco control to replenish the gasoline supply, while in the very first lap a pin sheared off on the rocker arm of the change speed gear, preventing the shifting lever from being passed through the opening in the sector, so that only the third and fourth speeds were available after that. This made it a difficult matter to start the car, as it was necessary to race the motor.

NATURE'S UNEQUALED GRAND STAND

HILLIARD IN SHAWMUT TAKES A TURN EASILY

LONG before nightfall of the day before the race the metropolitan motoring fraternity began to make the history of the Briarcliff trophy contest. A few hours later the general public added the factor of its racing enthusiasm and eagerness to be literally "in at the death," which the conditions seemed reasonably to promise. It was daylight on Friday, of course, before the cars and drivers were to furnish the struggle that had drawn these many, many thousands to view the battle of steel, muscle, and nerve that had been framed up and the tragic incidents that seemed assuredly imminent. It was an inviting prospect indeed to the racing enthusiast and to the horror seeker as well. Twenty-two dare-devils were to be recklessly cut loose over a narrow course with almost continuous sharp curves, bounded by dangerous ditches, stone walls, rivers and ponds the whole way, and replete with axle and spring-racking and tire-wrenching stretches besides to risk limb and life in a wild scramble for a trophy over a dangerous course. Sport loving and sensation seeking New Yorkers turned out by the tens of thousands. The attendance surely must have far passed the 100,000 mark, even though the numbers were not to be compared in magnitude with the thousands of cars that for days were headed Long Islandward and the hundreds of thousands that viewed the last Vanderbilt cup contest. The Briarcliff district is neither as familiar nor as accessible as the Nassau county circuit, nor had it the transportation facilities afforded by the Long Island railroads and trolleys.

Thursday afternoon cars began to stream out Broadway and through the Hudson river towns. With nightfall their numbers increased and by midnight there was an unbroken procession of gleaming headlights hurrying courseward. The hour for the closing of the course was an enigma. There had been official pronunciamentos that the entrance to the circuit would be barred between 2 and 3 o'clock, so that the majority cared not to risk missing securing a viewpoint by a past midnight start.

As early as 1:45 a. m. a squad of pressmen set out from Tarrytown, where they had been put up for the half-night at the Maxwell-Briscoe factory. The road was then aglow with gleaming searchlights. Turning to the east, streams of foot-passengers lined the road. The course reached at East View, the midnight scene was one full of fire and life. Stands large and small had been erected along the roadside. On every furlong of the road to the start there were parking space speculators swinging their lanterns and hawking their spaces. In places there were bunches of a dozen or a score of cars parked in the skirting fields. Here and there at frequent intervals an isolated vantage point had been seized and squatted upon and one saw the camp fires of the all-nighters.

Approaching the grand and press stands at Briarcliff the crowd of cars and people became denser, ending in a hopeless jam of machines and men at the start and finish point. En route were passed sky-larking processions of young men with arm badges telling that they were marshals. It was said that they were the much boasted militiamen, who were to guard the course. To one, who had seen the business-like soldiers at Savannah, it seemed a huge joke to call this military protection.

With the coming of daylight, the throngs of foot-passengers from the incoming trains and the nearby towns increased. With rare common sense they climbed the encircling hills and avoided for the most part courting danger by standing along the edge of the road. There were crowds, of course, at the turns, and here the hired guards and volunteer marshals were concentrated and made a show of keeping the crowds back and in order.

The newspaper men en route noted that several of the makers had established parking camps for their customers. There were parking grounds prepared by the Peerless and the American Locomotive people, and the Maxwell-Briscoe company had pitched a veritable Maxwell camp on a commanding hill and kept open house.

Throughout the race neighboring hills and rocky eminences were black with spectators, all watching the battle of the giants. Man could provide no better grandstands than those fashioned by the art of nature. High over the hills from the grandstand could be seen Briarcliff lodge, the hostelry of the district, and grouped on the nearer hills were cars, horse vehicles and spectators, all obtaining a panoramic view of the adjacent parts of the course and an excellent view of the contest.

RENAULT STRIKES ONE OF THE DOWN HILL PARTS OF THE COURSE

CHARACTERISTICS OF CONTESTING CARS

Conspicuous in Cars are Disk Clutches, Selective Gearsets, Chain Drive, Big Oiling Facilities, Large Gasoline Tanks, Ample Brakes and Magneto Ignition

HORSEPOWER OF CONTESTANTS

	Horsepower	Bore	Stroke
Isottas	55.1	5.7087	4.7245
Fiat	48.4	5.5110	5.1182
Stearns	46.2	5⅜	5⅞
Benz	...	...	...
Apperson	48.4	5½	5
Bianchi	41.6	5.1182	5.9056
Simplex	52.9	5¾	5¾
Lozier	44.1	5¼	5¼
Renault	44.1	5¼	5¾
Thomas	52.9	5¾	5½
Allen-Kingston	40	5	5¾
Panhard	48.6	5 45-64	5 5-16
Maja	30	4.3308	5.1182
Shawmut	36.8	4.8	5½

ACCORDING to A.L.A.M. rating, Louis Strang's Isotta, the winner, was the highest powered machine on the course, its cylinder diameter of 145 millimeters being equivalent to 5.7087 inches, which, by the formula, gives 55.1 horsepower. Emanuel Cedrino's Fiat, which carried off second honors, was much lower-powered, showing only 48.4 horsepower; Vaughan's Stearns is rated at 46.2; Lytle's Apperson ties with the Fiat at 48.2; Seymour's Simplex, the non-official fifth, with its 5¾-inch bore, gives 52.9 horsepower; Leland with his Stearns, the non-official sixth, is 46.2, the same as Vaughan's; and Sartori's Bianchi, the non-official seventh, but official fifth, is only 41.6, the cylinder bore measuring 130 millimeters, which translates to 5.1182 inches. These were the only seven cars to reach the grand stand on the eighth lap and have their times recorded, the Simplex and Leland's Stearns being vouched for by three press representatives. Leaving the human factor out of the race then, the proper car won, assuming the mechanical construction of all of them to be on a par, which, of course, is far from the actual status of these seven machines.

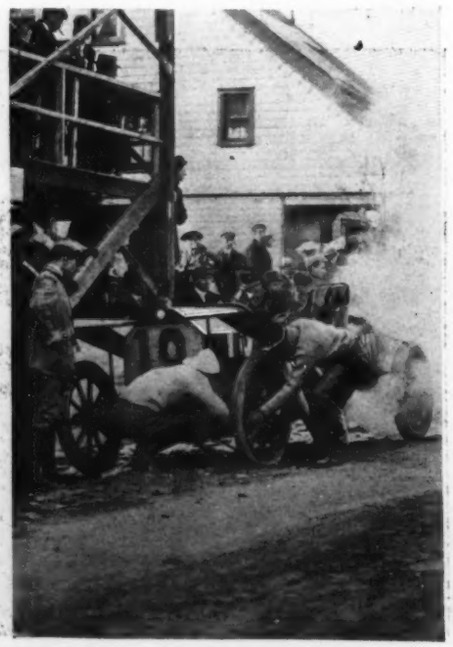
Highest Power Wins

That the highest powered car should win in the Briarcliff was not unexpected, due to the intoxicating meandering of the course through mountain valleys, by woodland streams, through forests and by lakes, providing, of course, the car was geared for the test. Here is where some of the makers—and they were not a few—made a grave error. Speed was the sole object sought and, of course, high gearing was looked upon to provide this, but in this calculation the problem of having to slow down eighty-seven times on each circuit because of bridges, corners, curves or railroad crossings, besides lowering of speed due to other cars on the course was neglected, so this alone was partly responsible for the showing made by some. Approximately ninety slow downs on each circuit makes 720 on the eight laps. Wherever there was a slow down there had to be picking up and in these 720 pick-ups the cars with medium gear had a great advantage. This was particularly noticeable at some of the grand-stand curves. Once on the short straightaway stretch leading past the grand stand Strang would throw into high and be away in a twinkling; whereas not a few of the others were slow and lost time changing gears. On a course with 50 per cent of straightaway high gearing is good, but not where 720 curves or turns have to be made. This happy combination of high power and medium gearing, coupled with the dexterity of Louis Strang as a racing car pilot and the good construction and design of the Isotta, was the cause of victory of the Italian car.

Favors Short Wheelbases

Next in importance in racing cars over a course of Briarcliff nature is the abbreviated wheelbase, which was lacking on most of the twenty-two competing cars, the Apperson, Shawmut and Fiat being the only cars between the 100 and 110-inch makes. Strang drove a 118-inch machine, Vaughan's Stearns is 120 inches, the Loziers are reported at 124 inches, the two Simplexes have the same measurement; the Bianchi is 120 and the two Renaults and the Thomas are catalogued at 112 inches. The exact length of the Fiat wheelbase is not known, but it is short and this was in part responsible for a few of the fast laps Cedrino made. On the grand-stand curve, Strang never made it nearly so fast as Cedrino did on his last four laps; Lytle took it fast without apparent skidding; whereas Seymour with his long wheelbase Simplex threw up more dirt at less speed. Poole in his Isotta is a fast corner driver, duplicating not a few of his performances of the Savannah course, but throwing up clouds of loose earth on the poorer turns.

But the abbreviated wheelbase did not play as big a part on the 600 or more turns each driver who completed the eight laps had to make, as might be expected due to the peculiar grouping of the bends, it being rare, except at right-angled turns, for one to be alone. In places three or four followed in succession, the driver having to zigzag the course for ½-mile at a stretch. On such places fast speed was not possible with any length of wheelbase; but if a car of 96-inch wheelbase, much like the winning Darracq in the last Vanderbilt race, had been in the contest it would have been interesting to note what it would have done.



TIRE CHANGE AT GRAND STAND

Some Tires Wear Well

After having noted a few of the primary considerations on racing cars the majority of the spectators, for some unknown reason, took into the tire situation, not a few of them believing that tire size as well as construction is a determining factor in a contest. With the exception of the Renaults all of the foreign machines used one size of tires on the front wheels and a larger size on rear. Strang's Isotta used 870 by 90 millimeters, or 34.25 by 3.54-inch ones on the front wheels and 880 by 120 millimeters or 34.64 by 4.72-inch pneumatics on rear. Cedrino's Fiat used the same sizes. It is not known the exact sizes used on the Stearns machines; Lytle used 34 by 3½ and 4-inch front and rear; Sartori was an apparent believer in big tires, his Bianchi carrying fronts measuring 35.82 by 3.54 inches and the

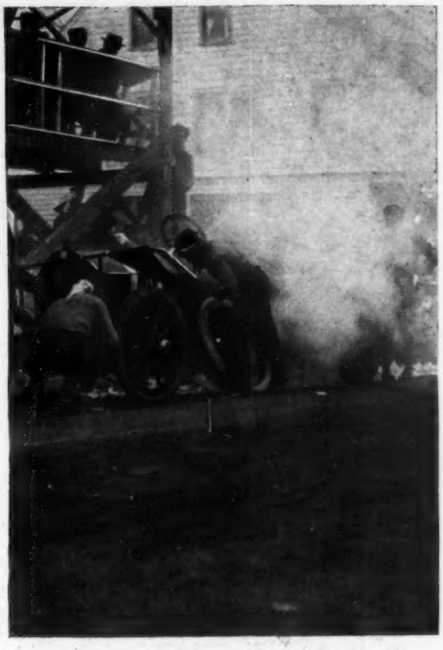
rears 36.02 by 4.13 inches. But it remained for the Simplexes and the Panhard to take the biggest sizes, these cars using 36.8 by 5.31-inch ones on rear. The Simplex used a 36.02-inch size in front, but the Panhard preferred a smaller size. The Loziers used 36 by 4 and 4½-inch sizes in front and rear, 34 by 4 and 4½ sizes were carried by Roberts on his Thomas; the Shawmut carried 34 and 36-inch makes, and the Allen-Kingston and Maja used small sizes.

Magnetos on All Cars

In ignition the magneto has full sway. The winning Isotta used an Eisemann high-tension magneto such as is familiar to many American car owners; a similar magneto was employed on the Panhard and in practically all of the remaining twenty machines Bosch magnetos of the high or low-tension variety were used. Double sets of spark plugs were quite common, but even two sets were not sufficient for many of the machines, and plenty of spark plug trouble was experienced. With Poole the porcelains gave trouble, as they did in Savannah, and Lytle's last lap was 10 minutes longer than his previous ones because of these little parts. A portion of the trouble seems to be not in the fouling of the points, but in the fusing of them, due to the amperage and voltage. Plugs removed were perfectly clean, but the two sparking points were united by a metal bridge.

Studded Treads Popular

Practically all of the cars started off with studded treaded pneumatics on the rear wheels and plain treads on the fronts; but it was noticeable how many put the studded treads on the fronts when the change was necessary. It rarely happens in a race that grand-stand spectators have a glimpse of tire repair work, but two good views were had of this right at the starting and finishing points. On his first lap Sartori blew out on the grand-stand turn and a little later Poole changed at the same point. Both were good examples of the value of the demountable rim, the time required in one case being less than 3 minutes and in the other a little over 4. That Strang should make the 240 miles without a change of tires, incidentally duplicating his Savannah performance, is a



READY WITH THE SPARE TIRE

point of great interest and seems to prove that it is not so much the taking of corners as continuous high-speed traveling that works havoc with tires. While there were times in the Briarcliff that the cars were touching 80 miles per hour or more these periods were exceptionally brief and the tire temperature apparently was kept lower because of this. Those drivers who had tire trouble, had it because of too fast corner work, due to hitting the corner at too high speed, using the brakes too severely and then skidding badly on the turn. Parts of the course were very hard on tires, due to the loose stones; but offsetting these spots was the 10-minute control in Mount Kisco, which gave the tires time each lap for dropping a few degrees in temperature. The steel studded tire proved a good servant for the many turns as well as the multitudinous braking work.

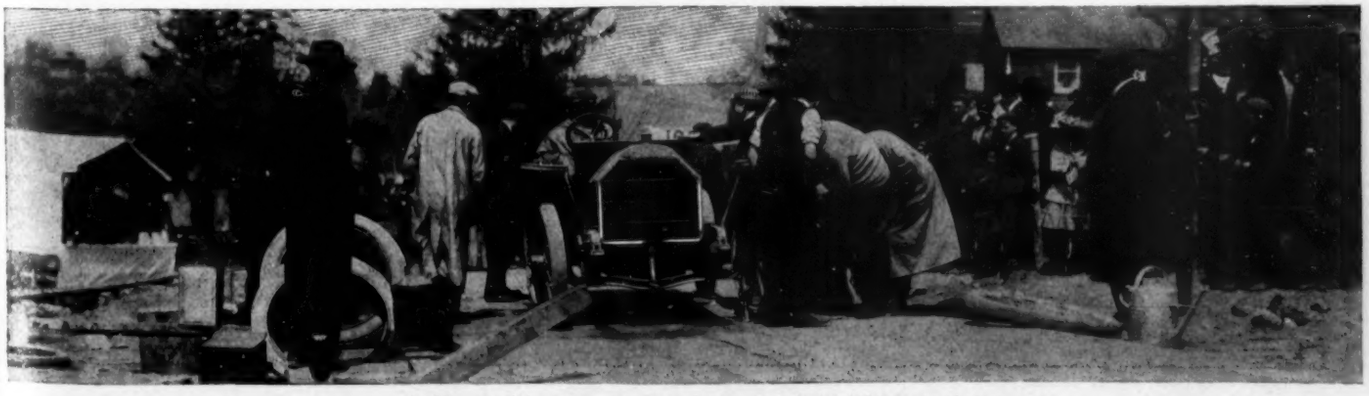
Good Brakes Needed

After the race was over one entrant declared that today it is harder to make a good brake than a good motor and the worn condition of a few of the brakes proved the quantity of truth the assertion contains. The last few Glidden tours have impressed very emphatically on many makers the necessity of having ample braking surface; in fact, tours demonstrate this more than does road racing, but the Briarcliff was an ideal jousting ground for friction brakes. All the chain-driven cars, with the exception of the Panhard, used four brakes, the preferred location being two contracting band ones on the jackshaft and two expanding or contracting members on the rear wheels. Strang employs the cast iron against steel variety, having two located on the jackshaft and two on the rear wheels; on the Fiat four metal brakes are positioned, two on the transmission and two on the rear wheels; on the three Stearns cars are steel against brass brakes, two on the jackshaft, two on the driving wheels; on the Apperson are four on the back wheels, the expanding set steel against bronze; the four on the Simplex machine are two copper-lined ones on the differential shaft and two cast iron against steel rear wheel brakes; many of the shaft-driven machines use but three brakes, two on the rear wheels and one on the driveshaft or transmission shaft. It was a commendable point to notice how little slipping of the wheels was done in making the turns, the old-time story of "slipping the wheels and skidding around the corner" not having many followers. Such "slipping and skidding" makes a few seconds only to be lost in minutes by changing tires.

Many Disk Clutches

The majority of cars used the multiple disk clutch, the followers of cone clutches being limited to the two Renaults; the Apperson was the only band clutch; the Stearns the only expanding type; the Maja the only coil spring Mercedes type; the Thomas the only three-disk variety and the rest, including Isotta, Fiat, Bianchi, Simplex, Lozier, Allen-Kingston, Panhard and Shawmut, used the multiple disk variety, the number ranging from fifty-one bronze and steel disks in the Isottas to smaller numbers in some of the others. The Shawmut employed the well-known Hele-Shaw type containing fifty-one disks, each having corrugations to increase the friction surface without excessive diameter, as well as to facilitate disengagement.

In change-speed sets the selective type



BARNEY OLDFIELD RESTS WHILE A TIRE IS BEING CHANGED

is paramount, the Panhard being about the only adherent of the progressive variety. The three Isottas were the only cars having but three forward speeds, all the others using four.

Practically all of the motors excepting Apperson, Thomas and Panhard use cylinders cast in pairs, some employing valves on one side, others on opposite sides. The T-head cylinder is employed in the Apperson, Thomas and Panhard. Where cylinders are in pairs the desire to obtain large valves has led to placing the valves oppositely as in the case of the Isottas, which employ 2½-inch valves. The Stearns cars, however, have them on one side. Positive pump and fan circulation is in use on all excepting the Renaults, in which thermosyphon circulation is employed and in which cars the radiators are carried at the rear of the motor, forming the dash. The trouble with the majority of motors in long races appears to be the lubrication problem and it is surprising the amount of oil injected into them, especially those of the high-speed variety. More than 40 gallons were used on the 240 miles by three of the contestants; two of the others said over 30 were used by each of them and those not interviewed doubtless have similar tales of big oil consumption. Many of the cars were lost in clouds of smoke as they passed the stand, filling the road from side to side; on the other hand, not a few cars made the seven or eight laps without emitting a bit of smoke, and it would be interesting if it were only known how much oil they used. As it is the oil consumption of a car in a big race is not comparable with the consumption of such a car on touring work and the prospective buyer need not get frightened at this favorable Standard Oil showing of some of the fastest machines.

As to stock cars the less said in some cases the better. There were stock cars in the race, not a few of them, and they were immediately recognized by the spectators, but on the other hand there were cars of which ten duplicates have not been built as yet by the factories. There is not a doubt but that ten of the Isottas have been built and sold; in fact, there is good proof that many more than that number have left the factory; there is some doubt as to the manufacture of ten duplicates of

ROBERTSON IN NEED OF GASOLINE

Cedrino's Fiat, which proved to be the fastest car on the course; the Appersons are known to have built more than ten of their Jackrabbits; questions have been raised as to whether ten of the Loziers were finished by the time limit set; but with the Stearns, Thomas, Allen-Kingston, Shawmut, Maja, Renault, Simplex, Panhard and Bianchi they were stock cars and looked it.

MOTOR LIFE OF LOUIS STRANG

The story of Louis Strang's motor car life discloses a wider familiarity and experience with motor cars than one would look for in one so young, for he is but 23 years old, having been born at Amsterdam, N. Y., August 14, 1884. He was educated there and later at a private school at Scarboro, near the Briarcliff course. His mother, who was a woman of considerable property, lost her money in Chicago gas stock and Louis had to go to work. Later his mother died, leaving three sisters for him to support, one of whom is married now. He started as a typewriter with H. H. Franklin, who then was a manufacturer of them, and thus later became familiar with motor cars. Strang became a chauffeur in New York, first driving Franklin No. 4. He then went with H. P. Robbins and toured Europe as his chauffeur, a Panhard having been purchased on the other side from Henry Farman, the racing man. His next employer was H. O. Havemeyer, the sugar king, who leaned toward the Mercedes. Strang got his first racing experience as demonstrator for Joseph Heller, an importer, through driving the latter's Pipe car in the straightaway races at Long Branch. He next went with E. C. Hoyt, president of the leather trust, and then returned to demonstrating under E. B. Gallaher, importer of the Richard Brasier. Then he looked after a pair of Renaults for C. B. Hudson, a race track man, the intimate friend of John A. Drake. Walter Christie next secured him for his mechanic in the elimination trials and Vanderbilt cup race of 1906. Strang then looked after Robert Maxwell's Panhard. Last year the Briarcliff trophy winner was Christie's mechanic in the grand prix. On his return he went with the Pilain agency, driving one of its cars in the 24-hour race at Brighton Beach last season. After this he was chauffeur to E. C. Clark, the son of Bishop Potter's wife, whom he left to go with Christie in his southern track racing tour. After Christie's accident Strang drove the car at Nashville, Atlanta and Birmingham. John H. Tyson, the 22-year-old sportsman, was his next and is his present employer.

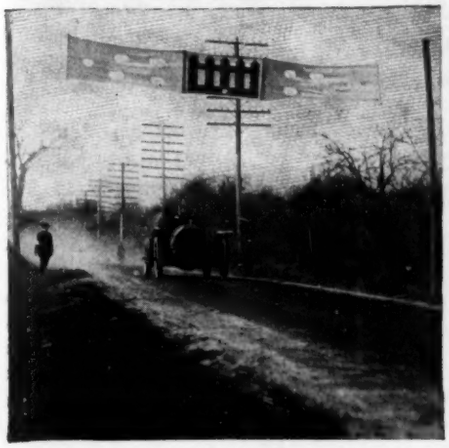
Strang's practice for the Briarcliff race consisted of six rounds of the course in a Franklin and one try-out lap in the Isotta he was to drive in the race. "I attribute the greater part of my success as a driver," said Strang, "to the instructions I received from Emil Stricker. Stricker came to this country as a factory man when the Daimler Mfg. Co. bought the American rights to manufacture the Mercedes. Later he was a demonstrator for the late Alexander Fisher, who then imported the Rochet-Schneider. It was while he was with Mr. Fisher that he gave me the driving lessons. I always have remembered and followed his tips. He taught me how to turn curves, how to hold the steering wheel at the bottom, and above all not to touch any lever until I used it.

CONTROL AT MOUNT KISCO, WATSON LEAVING, VAUGHAN WAITING

START

Need of Uniform Signals for American Road Races

FINISH



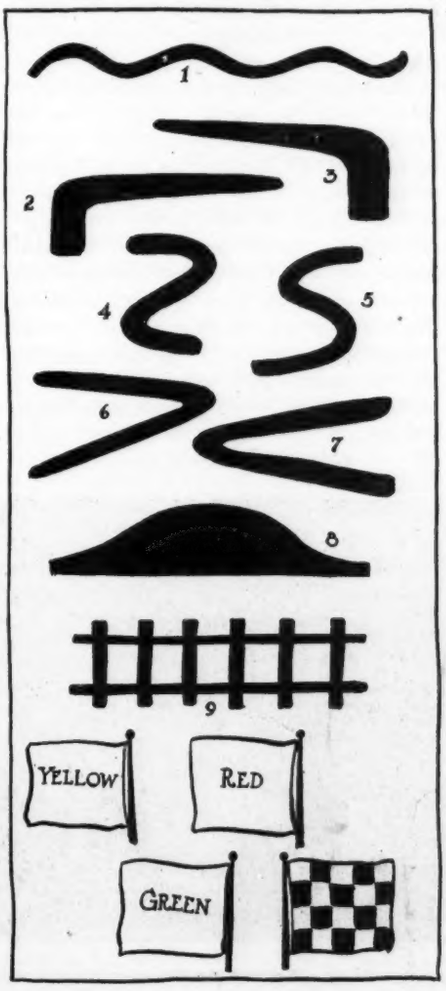
DENOTING RAILROAD

DENOTING ZIG-ZAG COURSE

DENOTING HAIR PIN TO RIGHT

WITH the present stimulus received by road racing in America due to the success of the three Savannah road races and the recent Briarcliff contest, the necessity of adopting a regular code of signals to be used on the course for the benefit of the drivers becomes apparent as well as the need of a flag code for the signaling of contestants while racing. Some little discrepancy was noted between the signs used at Savannah and those at Briarcliff, and as three or four of the pilots drove in both events the possibility of confusion as to the interpretation of signs at once becomes apparent. Not only should the signs be uniform for every road race exigency, but the distance of these signs from the turns or other road conditions of which they give intimation should be the same, so that unconsciously and mechanically the driver on seeing a sign knows the exact distance in which he has to prepare himself for the left or right turn, the railroad crossing or the bridge.

Many of the present road signs and signals now in use are importations, their use having first appeared during many of the big continental races of past years. Of the signs used all are illustrated on this page and on the top of the page are photographic illustrations showing some of these signs used at the Briarcliff race. Signs for "Start and Finish" are common black letters on a white canvas ground, the canvas stretching entirely across the roadway directly above the starting line. Both words appear on the same canvas, one on the right half, the other on the left half. For signaling cars on the course two flags are used by the signal men stationed on turns, at cross roads, at railroads, at controls and at whatever other points the referee deems necessary. The red flag means "clear course, go ahead"; the yellow flag means "danger, be ready to stop immediately." To the layman the use of the red flag for clear course and yellow for danger appears a little paradoxical, but the reason is found in the fact that a red flag can be seen at a greater distance than a yellow one, the latter always showing at sufficient distance to warn of danger. Readily seeing a red flag ahead at a great distance a driver is immediately at ease and runs his car to the limit, whereas if the yellow flag meant "clear course" it would be harder to see and the peace of mind of the driver would not be so great as under the present rule. A green flag is used by the starter to signal the drivers when they have finished the second last lap of the course, its literal meaning being "one more lap." This flag is waved across the roadway as the contestant approaches. The checker board flag means "you are finished" and is waved like the green one across the course but at the end of the race for the individual contestant.



Next come the signals hung across the road at turns and bridges as well as the interpretation of each. These are illustrated herewith. In number 1, the wavy black line is the signal for a meandering wavy course ahead, this signal hanging a short distance before the starting of this road. On the Briarcliff this signal frequently was displayed and admirably indicated the tortuous courses around the lakes, hills, water reservoirs and streams. Number 2 indicates a 90-degree or right angled turn to the right, number 3 a similar turn to the left. In interpreting all of these signs start at the bottom and read up, so that in translation number 2 shows a right turn at the top of the broad vertical part of it, and similarly with all of the other signs read up. Numbers 4 and 5 are S turns, the first one showing the turn to be first left, then right, followed by a final left; whereas in number 5 the turn is first right, then left and lastly right. Signals numbers 6 and 7 are for turns sharper than right angles and which can be used down to the most acute hairpin, the only difference in the sign being the size of the angle, which is less according to the acuteness of the turn. Number 6 is a hairpin turn to the left, and number 7 a hairpin to the right. Sign number 8 signifies a bridge, the graphic nature of it being much in conformity with the general conception of a bridge, so much so that scarcely an amateur seeing this signal for the first time but recognizes it. Lastly in number 9 appears the railroad track signal, not exactly as used on the Briarcliff course but on the general line of such. The railroad sign for the Briarcliff resembled a heavy iron gate made with vertical iron strips each pointed at the top.

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STOCK MOTOR CAR DEFINED

NOW THAT stock car and stock chassis races are becoming fashionable many people are asking the two questions: "What is a stock car?" and "What is a stock chassis?" According to the new racing rules of the American Automobile Association, which rules became effective April 15, a stock car is "a motor car completely described in the manufacturer's catalog for the current or any preceding year, which is manufactured in quantities of ten or more, which is on sale by the regular selling representatives of the manufacturer and is manufactured ready for deliveries to buyers."

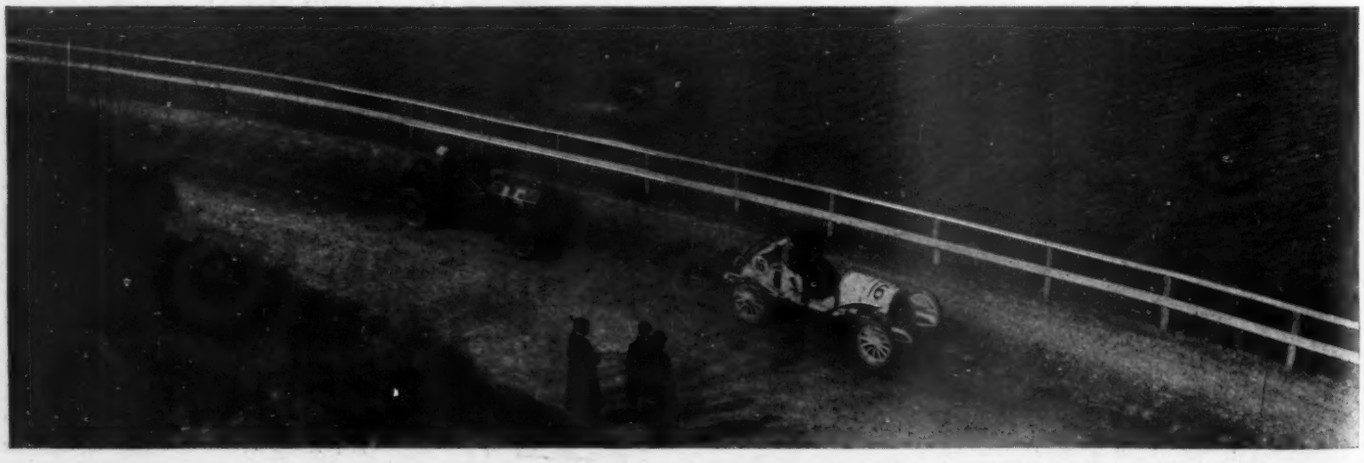
The stock car definition makes four limitations. First, it must be described in the present or in some past catalog; second, it must be manufactured in quantities of ten or more; third, it must be on sale by the regular selling representatives; and fourth, it must be manufactured ready for delivery to buyers. Concerning the first limitation, that of catalog description, the present policy of so many manufacturers having a separate catalog for each model built makes it possible for a special car to pass as a stock product by the issuing of a leaflet describing it. In the second, limitation of manufacturing in quantities of not fewer than ten means that at least ten duplicates of the car must be built before the race takes place; it does not appear sufficient to say that the parts of ten of such cars are ordered, or that the parts for these ten are ready in the factory awaiting assembly; rather, that at least ten must have been built.

A maker who builds 1,000 cars a year can much better afford to construct ten special machines than can another manufacturer whose annual output is fifty cars. The maker who builds but fifty cars, ten of which are special models, has more right to term those ten stock cars than can the maker of 1,000 cars who builds ten special racing creations under the disguise of stock cars. The maker of fifty cars who erects ten special machines makes 20 per cent of his output of this special design; whereas the other builder with ten out of 1,000 has but 1 per cent of his output of the special build. It scarcely would be fair to assume that a model constituting but 1 per cent of a maker's output would be a stock machine, at least the general public would be slow in accepting it as the maker's representative car model. As many makers build three, four or five models, it is fair to assume that a model constituting 20 per cent of the total output would be a stock model.

The third limitation that the stock car must be on sale by the regular selling representative is not prohibitive in that not a branch or agency but is ready to sell any car manufactured by the concern represented or that has not the privilege to take orders for special machines. The fourth limitation, namely, that the stock car must be manufactured and ready for delivery to buyers, makes it imperative to have cars built before the order is received from the buyer. This means the necessity of the manufacturer having one of the cars, on question as to its right to be called a stock machine, built and ready so that should an order arrive nothing remains but the usual factory work of painting to suit and finishing according to specifications. This is a strong limitation, the strongest of the four and if literally interpreted according to factory practice on the regular models would be the one clause of the definition to prevent makers entering in stock car events machines that are not strictly stock cars.

THE BRIARCLIFF RACE

THE BRIARCLIFF RACE has taken its place in history with the half dozen other big American road races that have been conducted. From the American point of view it was a success. From the viewpoint of a couple or three foreign makers it was a success. From a New York standpoint it was a success. But much of this success was due to Providence. The course is such that had Old Sol not shone forth in untarnished splendor for days previous to and on the day of the contest some of the roads would have been impossible for racing cars. Had the desires of the crowds been to crowd upon the course, those crowds could have done so, for the brigades of boy patrols were utterly incompetent to clear or keep the circuit clear. Nature was the course guardian. The lay of the ground is such that to stand beside the road little could be seen but if a spectator went back on the hills a few yards from the course long stretches of the circuit at once became visible. Beside the roadway there was little room to stand; either the ground rose steeply at one side or was closely bordered by a stone wall at the other; and if neither obstructed then the best and most comportable view could be obtained from a more remote view point on the neighboring hills. From a standpoint of guarding the course, the Briarcliff gave no information for future events. As a test of cars and drivers it was ideal, the running gears of the machines coming in for particularly hard testing, whereas the 10-minute control at Mount Kisco gave the drivers and motors a breathing spell each lap which afforded the additional opportunity of the drivers keeping exactly informed as to their position in the race as well as the progress of all of the other contestants.



ROBERTSON IN PANHARD AND HILLIARD IN SHAWMUT AT BRIARCLIFF RACE SKIRTING ONE OF THE WESTCHESTER COUNTY LAKES

SIXTEEN perfect scores out of thirty-two chances as resulted in the recent reliability run at Norristown, Pa., would have been regarded as something wonderful a few seasons back, but in these modern times it is a matter of only passing comment. The public has been taught to expect that the motor car is capable of most anything, so it accepts the Pennsylvania finding as the natural result. The public is becoming a wise public in things motoring and so if a promoting club wishes to attract more than ordinary attention to its contest it has to make stricter rules. The motor car has learned all the common stunts, which may be likened to "playing dead dog," "speak," and the like such as is taught the pet canine. Now give it something worthy of its prowess.

MOTORING EVENTS THAT WILL BE CONTESTED THIS YEAR

Detroit Test—Detroit Automobile Dealers' Association's endurance run, April 29, 30 and May 1.

Baltimore Run—Sealed bonnet test at Baltimore, May 2.

Harrisburg's Test—Endurance run of Motor Club of Harrisburg from Harrisburg, Pa., to Philadelphia and return, May 4.

Targa Florio—Third annual Sicilian road race, May 10.

Irish Reliability—Annual Irish reliability trials, May 11-16.

Endurance Run at Hartford—Automobile Club of Hartford's endurance run, Hartford, Conn., May 15.

Chicago Hill-Climb—Chicago Motor Club's third annual hill-climb, May 15.

Indianapolis Endurance Run—Sealed bonnet test at Indianapolis, May 20.

Bridgeport Climb—Annual hill-climb at Bridgeport, Conn., May 30.

Twelve-Hour Endurance—New Jersey Automobile and Motor Club's 12-hour endurance run, probably May 30.

International Reliability—Royal Automobile Club of Great Britain's 2,000-mile international reliability test, June 1-18.

Dead Horse Climb—Annual Dead Horse hill-climb at Worcester, Mass., June 6.

Prince Henry Tour—First annual Prince Henry tour in Germany, June 9-17.

Cleveland Hill-Climb—Annual Cleveland hill-climb, June 13.

Chicago Reliability Contest—Twelve hundred mile 4-day contest Chicago Motor Club, June 24, 25, 26, 27.

Glidden Tour—Start of annual A. A. A. tour from Buffalo Wednesday, July 9; good roads convention preceding it July 6 and 7.

Grand Prix—Third annual French grand prix, July 7 and 8.

Chicago Economy Test—Third annual economy test of Chicago Motor Club, August 14.

STRANG might rightfully be dubbed the "Nazzaro of America," for so far this year there has been a striking similarity in the careers of the brilliant Italian and the dashing young American. Nazzaro started last year with a victory in the Targa Florio, kept up his winning pace in the emperor's cup race in Germany and made it a trinity of victories when he beat a brilliant field in the French grand prix. Strang's opening shot bowled over the Savannah cup, his next one brought down the Briarcliff and now there remains only one more race to elevate him to the Nazzaro standard. A victory in the grand prix would accomplish this and there is just enough superstition in most of us to make it seem probable that the "dope" will work out this way. The selection of Strang to drive a Thomas in the French classic when the youngster had no idea of taking part in the affair makes it look as if Fate was at the wheel and that Destiny has a rich prize in store for this modest young American who is doing so much to refute the assertion that all the best race drivers are of European birth. Surely the best wishes of all Americans will go with Strang when he boards the boat that is to carry him to France, where he meets Nazzaro.

IN selecting the week of December 31-January 7 for the Grand Central palace show, as is announced in telegraphic advices from New York City to Motor Age, the American Motor Car Manufacturers' Association has hit the nail on the head, it would seem. It is in the nature of a compromise. The last show held in the palace was in October, which proved too early; the preceding one came a month later and the one before that was in the middle of January. So having run the gamut, the independents believe they have at last struck it right. Their canny reasoning as regards the financial situation around New Year's day shows the master mind of Reeves has been at work and that this time the A. M. C. M. A. show will be no experiment so far as dates are concerned—it isn't in other directions, that's evident from the recent successes the big organization has recorded.

THE Briarcliff did more than anything else to advance the cause of Savannah in its fight for the Vanderbilt plum. One could not but draw comparisons between the narrow and rough roads of Westchester county and those boulevard-like stretches down in Georgia; between the excuse for military protection offered by Briarcliff and the business-like methods of the citizen soldiery of the south. All this ought to have an important bearing on the Vanderbilt decision and undoubtedly it will so, for the news from New York is that Savannah is running like a stake horse in the Vanderbilt race and that now it is a favorite.

LELAND'S STEARNS AND MICHENER'S LOZIER IN HOT STRUGGLE ON NARROW STRETCH IN THE BRIARCLIFF

SIXTEEN PERFECT IN NORRISTOWN RUN

NORRISTOWN, PA., April 28 — Special telegram — Thirty-two cars left here this morning on the 123-mile endurance run of the Norristown Automobile Club and when the contest committee had waded through the thick piles of checkers', observers' and drivers' cards tonight at 10 o'clock the result showed that just half of them had complied with the conditions of the run in every detail. Sixteen clean scores out of thirty-two starters shows that the test was much too easy, especially when it is recalled that the smaller cars experienced little or no difficulty in performing the task set before them by the club.

There were no classes, each car entered on its merits, and an average speed rate at a trifle less than the legal 20 miles an hour proved an easy proposition to all. A brace each of Maxwells, Reos, Mitchells and Ramblers reached the haven of the elect, while the Packard, Cadillac, Buick, Stoddard-Dayton, Winton, Premier, Apperson and Ford each had one representative among the chosen ones.

A sixteen-cornered tie is something of a proposition for even such an energetic and painstaking contest committee as the Norristowners have proved themselves to possess, and at an impromptu meeting tonight it was decided to have a conference of all the clean scorers here at Chairman Nyce's office next Friday night, when some arrangements will be decided upon to have a run-over much more severe as to conditions. A route of not less than 200 miles to be followed by a technical examination was suggested and seemed to meet with favor among the entrants.

Under the conditions the run was more of a pleasure trip than an endurance contest. The roads were generally good, Monday night's rain putting them into excellent shape and laying the dust. The temperature was pleasantly cool and the sun shone brightly all day long. The schedule was by no means a severe one unless it might be for the low-powered cars which were compelled to compete under identical conditions with the big touring cars and roadsters of high power.

Twenty minutes after the start from Norristown, F. M. Jaquith's Crawford punctured a left rear tire and Jaquith, while repairing it, stepped in front of the Packard driven by Van Peacock and was knocked senseless. Fortunately the press car, a 40-horsepower six-cylinder Pierce-Arrow, driven by Archie Hughes, who gained fame as a Glidden tour contestant, happened along shortly afterward and Archie helped to straighten things out. A Franklin, driven by Dr. E. G. Kriebel, which was doing duty as an emergency car, arrived on the ground in time to put a professional finish to the work begun by the press men. The press car came to the rescue again later in the day, when Hughes picked up the crew of S. E. Ballard's Franklin, put out of commission by a broken carbureter, and brought the men safely into Norristown.

PERFECT SCORE CARS

No.	Car	Driver
2	Maxwell	David
3	Packard	Van Peacock
6	Reo	Templeton
8	Cadillac	Lee
9	Mitchell	Stutzinger
10	Buick	Mann
11	Stoddard-Dayton	Wildman
14	Maxwell	Longstreth
17	Reo	Beideman
20	Winton	Mountain
21	Mitchell	Jackson
26	Ford	Graham
28	Rambler	Bitner
29	Rambler	Brown
35	Premier	McNamara
36	Apperson	Benson

Another car rendered hors de combat during the afternoon was John L. Scull's Acme, driven by Malin Leinau. It collided with a rail fence while nearing Reading and tore off a front wheel. Help was telephoned for from the Acme factory not far away and the car was towed in for repairs, upon the completion of which, a few hours later, the car proceeded and finished at Norristown at 7:45 o'clock. The license tag on the front axle swung and fouled the steering gear, and when Leinau attempted to take a sharp turn the car refused to respond and left the road.

The schedule as outlined by the contest committee, with the mileage and time allowance, follows:

	Miles	Time h.m.
Norristown to Coatesville	28.2	1:30
Coatesville to Lancaster	26.4	1:30
Lancaster to Reading	31.7	1:40
Reading to Pottstown	16.9	:50
Pottstown to Norristown	19.7	1:00

Checking stations were established at the Hotel Montgomery, Norristown, start and finish; Stephen house, Coatesville; Wheatland house, Lancaster; Mansion house, Reading, and the final one at the Shuler house, Pottstown.

The rules adopted for the government of the contest were thought to be sufficiently severe to obviate the possibility of an overwhelming proportion of clean-score cars. Boiled down, they provided for each car being equipped according to catalog specifications, carrying its full passenger quota, with speedometers or other speed-recording device barred. Between checking stations each car could stop for a total elapsed time of 5 minutes, and no more, without penalization, provided no repairs or adjustments, except supplies replenishment, were made during said time. Repairs or adjustments, except to tires, were penalized, whether the car was in motion or not, and but one man at a time was allowed to work on a repair. Allowances of 30 minutes to Lancaster and 45 minutes on the return trip were given for tire repairs, thus eliminating that variety of trouble as a penalizable offense.

Other rules included the carrying of an observer to keep strict tab on all stoppages for repairs, etc.; the continuous running of the motor throughout the contest, except at the noon control at Lancaster; adherence to rules of road, local and state speed laws; disqualification or penalization for wilfully blocking another car, etc. The penalty table was quite lengthy and severe to a degree. For instance: Repairs or adjustments, except tires, 1 point for each minute or fraction thereof consumed; leaving the announced route, 5 points; lateness at control, 1 point per minute; ahead of time at control, 1 point per minute; stops between controls, in excess of 5 minutes, 1 point; stopping motor, 10 points, and 1 additional point for each minute or fraction thereof until started. Penalizations also were provided for loss of equipment en route.

As the schedule called for departure from Norristown at 8 o'clock, arrival at Lancaster 3 hours later, and departure therefrom at 1 o'clock everybody took advantage of the long stop to feed—a welcome departure from the usual custom hereabout of pushing through to the finish unfed, arriving at the home stake too late for lunch and too early for dinner.

Many of the contestants arrived in Norristown Monday afternoon and night, and the Norristowners took advantage of their presence to furnish an impromptu entertainment and feed to prevent the strangers from feeling lonely. For a young club the Norristowners certainly far outclass in energy and nerve many of the older organizations in the large cities.

HARRISBURG ATTRACTS ENTRIES

Harrisburg, Pa., April 27—The arrangements for the big 2-day endurance run of the Motor Club of Harrisburg, May 4 and 5, from Harrisburg to Philadelphia and return practically are complete. The technical committee which will pass on the condition of the contesting cars will consist of David Beecroft, of Motor Age; Richard Sellers, chairman of the contest committee of the Quaker City Motor Club, and W. O. Hickok, III. During the past week an exploring party took a trip over the route and established checking stations at the Eagle hotel, Lebanon; Mansion house, Reading; Allen house, Allentown; Monument Square, Easton, and Monument house, Doylestown. The Walton headquarters of the Quaker City Motor Club, is the official stopping place in Philadelphia, the big White garage on North Broad street being utilized for storing the contesting cars overnight. For the second day's trip the controls will be at the Hotel Montgomery, Norristown;

Mansion house, Reading; Wheatland house, Lancaster, and at Mount Joy. There are already twenty-seven entries, with several more days to hear from, and the winner will have his work cut out for him, for he will be up against such clever drivers as Walter White in his White car, C. W. Kelsey in his Maxwell, Leinbach in a Stoddard-Dayton, Shirk also in a Stoddard-Dayton, Berger in an Olds and a half-dozen other cracks.

PROGRESS OF NEW YORK BILL

Albany, N. Y., April 26—The Armstrong-Merritt motor bill may be taken up at the special session of the legislature, called by Governor Hughes for next month. It will be remembered that Senator Armstrong moved on the day before adjournment to recommit the measure to the committee, stating that it required essential though slight revision before final passage. In the bill as first introduced the annual registration fees ran from $3 to $13, these being the figures proposed by Oliver A. Quayle, president of the New York State Automobile Association. Subsequently A. R. Shattuck, a New York City motorist, assuming to represent the A. C. A., was responsible for increasing the fees from $5 to about $40 for the highest-powered cars. Later at a final conference concerning the measure, W. W. Niles, attorney for the A. C. A., supported Senator Armstrong in insisting upon a jail penalty for a first offense, which proposition was opposed by President Quayle, of the State association.

AFTER VANDERBILT PLUM

New York, April 27 — Whether the Vanderbilt cup course for 1908 will be located in Georgia or Connecticut yet remains to be definitely decided, with indications at present favoring Savannah. A definite announcement from the racing board is expected in the near future.

DETROIT HAS BIG LIST

Thirty Cars Are Nominated for Dealers' 3-Day Reliability Tour Over Michigan Roads

Detroit, Mich., April 28 — Thirty cars are entered in the first annual 3 days' endurance run of the Detroit Automobile Dealers' Association, which starts tomorrow, and which runs 140 miles to Saginaw, the first day; 139 miles from Saginaw to Kalamazoo the second day, and 143 miles from Kalamazoo to Detroit the third day, the entry list being as follows:

Name of car	Driver	Cyl.	Model
Oldsmobile,	Aubel	4	T.C.
Welch,	Neumann	6	T.C.
Stoddard-Dayton,	Lane	4	T.C.
Ford,	Cunningham	4	R.
Ford,	Kulick	4	R.
Pierce-Arrow,	Day	6	T.C.
Stevens-Duryea,	Schneider	6	T.C.
Stevens-Duryea,	Young	6	T.C.
Thomas Forty,	Grant	4	T.C.
Thomas Forty,	Mochesky	4	R.
Thomas Forty,	Lorimer	4	R.
Peerless,	Brady	4	T.C.
Pope-Hartford,	Bemb	4	T.C.
Northern,	E. Chapin	4	T.C.
Northern,	C. Chapin	2	R.
Northern,	House	2	T.C.
Cadillac,	Lemmer	1	R.
Cadillac,	Garland	4	T.C.
Cadillac,	Milock	4	T.C.
Cadillac,	McMullen	1	R.
Jackson,	Lockwood	4	R.
White,	Sheridan	Steam	T.C.
Jackson,	McCalmount	2	T.C.
Jackson,	Seidler	2	R.
Maxwell,	Bleasdale	2	T.C.
Maxwell,	Kelsey	4	T.C.
Mitchell,	Gilmore	1	T.C.
Brush,	Lobbell	1	R.
Brush,	Mandree	1	T.C.
Franklin,	McGraw	4	T.C.

All the entries are stock touring cars and runabouts, the former to carry at least three passengers, and the latter two. The system of penalization starts each machine with a credit of 1,000 points and deducts one point for each minute or fraction spent in repairs aside from those to tires. Each entrant furnishes an observer who will be assigned to a car selected by the committee. The usual arrangement for confetti cars and road direction has been made. At Saginaw, where the tourists will spend one night, they expect to attend a boxing match. Other festivities have been arranged in the cities along the route. The start and finish will be at the Tuller in Detroit and on the conclusion of the event the association will join in a house warming of its new club rooms in the hotel. The itinerary is as follows:

Wednesday, April 29, Detroit to Saginaw, 140 miles; from Pontchartrain hotel; checking out—Detroit to Pontiac, 27 miles; Pontiac to Orion, 12; Orion to Oxford, 4; Oxford to Lapeer, 12; Lapeer to Flint, 20.

Dinner at Flint—Flint to Saginaw, 35 miles; Saginaw to Bay City, 15; Bay City to Saginaw, 15. Check in for the night.

Thursday, April 30, Saginaw to Kalamazoo, 139 miles—Saginaw to Owosso, 35 miles; Owosso to Lansing, 30, check in for dinner; Lansing to Charlotte and Battle Creek, 49; Battle Creek to Kalamazoo, 25. Check in for night.

Friday, May 1, Kalamazoo to Detroit, 143 miles—Kalamazoo to Battle Creek, 25 miles; Battle Creek to Jackson, 45, check in for dinner; Jackson to Ann Arbor, 35; Ann Arbor to Ypsilanti, 9; Ypsilanti to Detroit, 29, check in at Pontchartrain hotel at the finish.

MUST WAIT FOR THOMAS

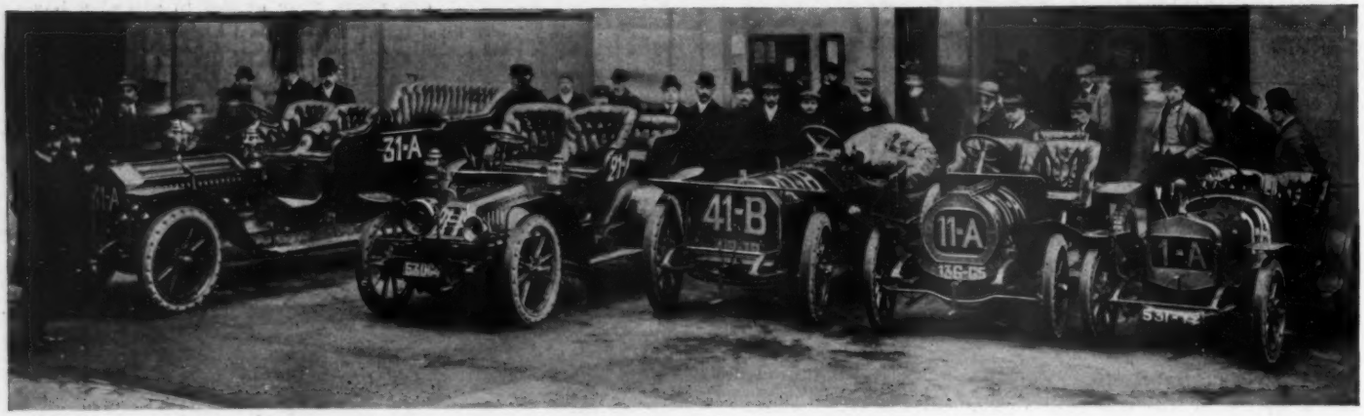
New York, April 24—Those in charge of the New York-Paris race have decided that all the cars shall leave Vladivostok together, this conclusion being reached at a meeting held yesterday. A cablegram has been sent to all the contestants, which will hold the de Dion and Zust at Vladivostok until the arrival of the Thomas and Protos, when all will start in the dash through Siberia. The Frenchmen and Italians will have to wait 10 days at least and it is expected the racers will leave Vladivostok about May 15.

FIRST ANNUAL ROAD CONTEST OF NORRISTOWN A. C. AT NORRISTOWN, PA., APRIL 28

No.	Name of car	Cyl.	H. P.	Cyl. bore	Piston stroke	Car model	Owner	Driver	Penalties: Road	Mech.	Total
1	Crawford	4	28	4½	4½	1906	F. M. Jaquith	F. M. Jaquith	18	10	28
2	Maxwell	4	28	4½	4½	D-1908	Kelsey Motor Car Co	W. M. David	0	0	0
3	Packard	4	30	5	5½	1908	Mrs. M. S. Lees	Van Peacock	0	0	0*
4	Matheson	4	50	5	6	1908	L. E. Taubel	Started unofficially			
5	Franklin	4	12	3¼	3¼	E-1905	S. E. Ballard	S. E. Ballard	Did not finish		
6	Reo	2	20	4¾	6	A-1908	D. F. Templeton, Jr	D. F. Templeton, Jr	0	0	0
8	Cadillac	4	30	4⅝	5	1907	J. Elwood Lee	J. Ellwood Lee	0	0	0
9	Mitchell	4	20	4	4	H-1908	B. F. Stritzinger	B. F. Stritzinger	0	0	0
10	Buick	2	22	4½	5	F-1908	C. W. Mann	C. W. Mann	0	0	0
11	Stoddard-Dayton	4	35	4¾	5	F-1907	F. B. Wildman	F. B. Wildman	0	0	0
12	Locomobile	4	20	3¾	4½	E-1905	J. R. Coulston	J. R. Coulston	0	11	11
14	Maxwell	4	40	5	5½	1906	Kelsey Motor Car Co	W. C. Longstreth	0	0	0
15	Maxwell	2	14	4½	4	RL-1907	Kelsey Motor Car Co	W. P. David	10	19	29
16	Maxwell	2	14	4½	4	LC-1908	Kelsey Motor Car Co	J. R. Lott	1	0	1
17	Reo	2	20	4¾	6	A-1908	H. A. Wilson	J. A. Beideman	0	0	0
18	Pierce Great Arrow	4	45	5	5½	1907	P. V. Hoy	P. V. Hoy	53	0	53
20	Winton	4	30	4¾	5	K-1908	J. E. Mountain	J. E. Mountain	0	0	0
21	Mitchell	4	20	4	4	H-1908	R. A. Jackson	R. A. Jackson	0	0	0
22	Mitchell	4	20	4	4	G-1908	Walter Cram	Walter Cram	6	0	6
24	Mitchell	4	35	4½	5	I-1908	Walter Cram	Harry Greenwalt	13	0	13
25	Reo	2	16	4¾	6	A-1907	Frank Leichthammer	Frank Leichthammer	Did not finish		
26	Ford	..	..	..	..	1908	Ford Motor Co	J. F. Graham	0	0	0
27	Crawford	4	40	5	5	D-1908	T. M. Twining	T. M. Twining	Finished too late		
28	Rambler	4	32	4½	4½	34-1908	T. B. Jeffery & Co	A. H. Bitner	0	0	0
29	Rambler	4	32	4½	4½	34a-1908	Brown Auto Top Co	N. B. Brown	0	0	0
30	Acme	6	45	4½	5	Six-1908	John L. Scull	John L. Scull	Finished too late		
31	Pennsylvania	4	50	4¾	5½	C-1908	H. S. Stillwagon	R. Harry Croninger	16	0	16
32	Buick	4	26	4½	4½	S-1908	E. H. Lewis	E. H. Lewis	0	3	3
33	Pope-Toledo	4	35	4¾	5½	1906	G. L. Taubel	G. L. Taubel	0	14	14
34	National	4	30	4½	5	1905	Christopher Cox	Harry C. Cox	181	10	191
35	Premier	4	30	4½	4½	1908	Norris City Garage	R. F. McNamara	0	0	0
36	Apperson	4	30	4¾	5	1908	Philadelphia Auto Co	E. C. Benson	0	0	0

*Protested on ground that Van Peacock stopped his motor after accident with No. 1 car No. 7, Reo; No. 13, Packard; No. 19, Pope-Toledo, and No. 23, Franklin, were scratched

SOLIDS WORST SPRINGS IN FRENCH TESTS



FIVE CARS FITTED WITH DUCASBLE SOLID TIRES IN FRENCH TEST

THE DUCASBLE SOLID TIRE

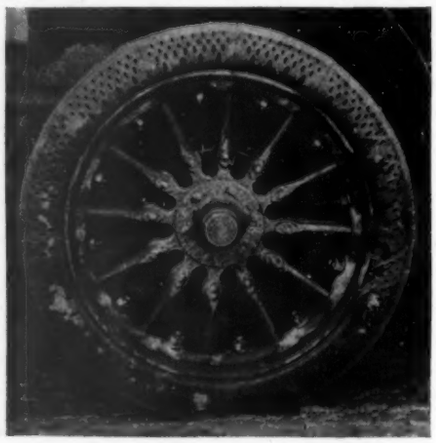
PARIS, April 18—The second annual "concours de roues et bandages elastiques" as the wheel and elastic tire trials are styled in this country, came to an end yesterday when the motor cavalcade returned to Paris after journeying from the French metropolis to Nice and back, a distance of about 1,435 miles, which had to be negotiated at an average speed of 18¾ miles an hour. The report of the judges gave the Ducasble first place in classes 1, 3 and 5; the Sider in class 2 and the M. Y. G. in class 5. In class 2 the Touzelet was second in division B of class 2, the Sider was winner and also first in division B of class 4. In the latter the M. Y. G. was second. This gives the rating: Ducasble, Sider, M. Y. G., Gauthier, Delta and Linton. The test also showed that the spring wheels are far from being on a par with the solids, for in rough going like that encountered on the journey just finished the springs failed to stand up successfully, it being noticed that some would weaken on one side, which of course had its effect on the stronger springs on the other side of the wheel.

The test consisted of going from Paris to Dijon, 312 kilometers, the first day; to Lyons, 196 kilometers, the second day; to Marseilles, 312 kilometers, the third day; to Nice, 226 kilometers, the fourth day. Then came a stop of 2 days at Nice, when the cars were placed on exhibition. The journey back was resumed on the 13th, the day's trip being to Marseilles; the next jump was to Lyon and then to Dijon, the final day's trip to Paris being 358 kilometers instead of 312 because of coming in by way of Port Maillot.

Twenty-one cars were represented at the start, the field being divided into five classes. In the first class were grouped one-cylinder cars of 100 millimeter piston displacement; two-cylinders of 80 millimeters and four-cylinders of 65 millimeters. The minimum weight allowed in this class was 750 kilos, including passengers. In the second class were four-cylinder cars of 85 millimeters and with 1,000 kilos weight minimum. In the third class were four-cylinders of 100 millimeters and sixes of 85, the weight minimum being 1,250 kilos. In the fourth class were four-cylinders of 125 millimeters and sixes of 105, the weight minimum being 1,500 kilos. In the fifth class were four-cylinders with over 125 millimeters displacement and with sixes of 105, the weight limit being 1,750 kilos. The weight of duplicate parts carried was not included and shock absorbers were barred. Classified this way,

FIELD IN FRENCH TEST

No.	Device	Car
	FIRST CLASS	
1	Automatic Ducasble	Delage
2	Metallo-Elastic	Le Matais
3	Sider	Alcyon
4	Spiro-Flexible	Renault
	SECOND CLASS	
11	Automatic Ducasble	Vulpes
12	Sider	Darracq
13	Touzelet	Ours
14	Ideale	Brasier
15	Linton	Gregoire
16	Metallo-Elastic	Werner
	THIRD CLASS	
21	Automatic Ducasble	Mors
23	Gautier	Renault
24	M. Y. G.	Mors
25	Sider	Rebour
	FOURTH CLASS	
31	Automatic Ducasble	De Dion
32	Metallo-Elastic	Darracq
33	M. Y. G.	Delaunay
34	Delta	Dietrich
35	Sider	Rebour
	FIFTH CLASS	
41	Automatic Ducasble	Motobloc
42	M. Y. G.	Peugeot



THE M. Y. G. SOLID TIRE

twenty-one cars went to the starting post. The weather might have been much better than it was, for the first 3 days the contestants plugged along in the rain over muddy roads. Then came a clear day and then another, but the second one was marred by the cars having to climb some stiff hills. A high wind prevailed the sixth day, although the weather was clear. On the first day's run the Delta broke a hub and the Spiro-Flexible was obliged to retire because it was discovered it did not have enough power in the engine. The Delta, however, was fixed up and continued the test. The Ideale and Metallo-Elastic in class 2 did not start. The Darracq fitted with Metallo-Elastics did not get going until 1 o'clock, while the class 1 Metallo failed to make the first control on time. The second day's journey was marked by good work on the part of all but two of the cars. The roads were heavy because of the rain, but despite this there were few mishaps. The Linton-Gregoire broke down and so was late at Lyons. The Delta, which had left 6 hours after the others, had failed to close the gap and so was penalized.

The continued rain finally told on some of the cars on the Lyons-Marseilles leg, there being three breakdowns recorded and two of the cars behind time. Numbers 3, 13 and 23 had the mishaps and numbers

15 and 34 were behind time. Number 32, which had been late starting the first day, was reported on schedule at this point. Running to Nice the fourth day out there was a chapter of mishaps. Number 1 was stopped by a collision, while number 2, which had been running slow, caught up with the schedule. Number 15 still was behind time, while number 12, like number 1, had a collision. Number 13 had been repaired but was not running on time. Number 23 was in the same condition and number 34 was behind time.

For 2 days the contestants stopped at Nice. Sixteen of them had reached there on time. At this stage of the journey it was clearly evident that the test was to result in a victory for the solids, for the only spring wheel officially surviving was the Metallo-Elastique.

Starting on the return journey April 13 numbers 1, 2, 3, 15, 12, 13 and 34 were on time again. Numbers 12, 23, 25, 31, 33, 41 and 42 had perfect scores. Page, the driver of the Motobloc, was disabled at this point through a back kick received while cranking his motor. He was forced to retire because of this. On this day's trip there were several stretches of bad roads, but for the most part the highways were in good shape. However, as a precaution, most of the wheels were fitted with the Fournier anti-slipping device. From Marseilles to Lyons a high wind handicapped numbers 33 and 42, which were limousines. Still, fast time was made by some. Rigolly in number 35 averaging better than 30 miles an hour for the journey, which, however, was not as good as the Motobloc did on the outgoing journey by 38 minutes. While on the subject of speed, it might be noted that on the outgoing journey from Paris to Nice, a distance of 1,100 kilometers, the M. Y. G.-Delaunay created a record by doing the distance in 22 hours 30 minutes, an average speed of 46½ kilometers an hour.

Little of note was recorded the last 2 days. On April 16 numbers 1, 2 and 12, the Delage fitted with the Ducasble tire, the Matais with the Metallo-Elastic spring wheel and the Darracq were the only ones reported on time. Numbers 4, 11, 13, 23, 24, 34, 32 and 41 were out, while those with perfect scores were numbers 21, 25, 31, 33 and 35.

Paris feels well satisfied with the test and the affair will be renewed next year.

STRAIGHTAWAY RACES PLANNED

New York, April 26—Under the auspices of the Long Island Automobile Club, arrangements are being perfected for the holding of straightaway races on Hillside avenue, just outside of Jamaica, L. I., the day and date being Friday, June 5, and the affair being a part of the celebration of the opening of the Long Island subways. A. R. Pardington is to be the general manager and the course is to be police guarded. Hillside avenue will supply a model straightaway course for the races.

SELDEN RATE IS CUT

Agreement Made Whereby A. L. A. M. Makers Will Get 20 Per Cent Royalty Reduction

New York, April 28—Special telegram — The Association of Licensed Automobile Manufacturers and the receivers of the Electric Vehicle Co. have come to an agreement, whereby, if the United States circuit court of New Jersey consents, there will be a 20 per cent reduction of Selden patent royalties and a limit of $250,000 set on the aggregate members shall pay in any 1 year.

As a matter of fact, since the bankruptcy of the Electric Vehicle Co. there has been a general holding up of royalties by licensed association members. There has been during the past year a bitter fight urged in the association against the excessive royalties demanded and the present situation furnished the opportunity to have them cut. It was seized most effectively. The following statement of the receivers contained in their petition to the court for permission to ratify the agreement, tells the whole story concisely:

"By the present agreements and the licenses granted thereunder, the said manufacturers are obligated to pay royalties of 1¼ per cent upon the catalog price of vehicles manufactured by them under the Selden patent, except where such vehicles are exported, on which the royalty is one-quarter of 1 per cent. A reduction of 20 per cent in the royalties is by the terms of these agreements allowed, if such payments are made by a certain date in one quarter prior to the date fixed for their payment.

"The present agreements also provide that the licenses issued thereunder shall continue for the remainder of the life of the patent, which is a period of about 5 years, unless a court of appeal shall adjudge the patent to be invalid.

"Prior to the appointment of the receivers, the members of the association had insisted that a modification of the agreements should be made which would result in the substantial reduction of the royalties required to be paid thereunder, and since the appointment of the receivers a large majority of them have refused to make payment on any royalties upon the ground that such royalties were excessive and oppressive. There are now a large amount of royalties in arrears for the quarters ending January 1, 1908, and April 1, 1908. In the hope of avoiding a prolonged and expensive litigation to compel the payment of royalties now in arrears, and those to become due in the future, the receivers believe that it will be to the interest of the creditors and stockholders of the Electric Vehicle Co. to modify the existing agreements in the manner outlined in the proposed agreement annexed to their said petition."

This proposed agreement, if made, will reduce the royalties required to be paid by the members of the association by 20 per cent, with the further limitation that the maximum royalties to be paid in 1 year shall not exceed $250,000. It also provides that should a decree be entered adjudging the Selden patent invalid, the royalty shall, pending an appeal from that decision, be paid to the trustee to await the outcome of the appeal. It also contains certain modifications of the terms upon which new members of the association may be admitted and surrenders to the association control of litigation to compel payment of royalties in excess of the maximum annual amount of $250,000 above referred to.

STARTER WAGNER BANQUETED

New York, April 27—It is no exaggeration to say that Starter Fred Wagner was given "the time of his life" at the Hotel Astor on Sunday night, when a few of his intimate friends to the number of forty-six gave him a banquet and a very useful souvenir of their admiration for his work. Though the affair was hastily gotten up, there was a ready response to the invitations, few hesitating either at Sabbath-breaking or even leaving suburban homes on a Sunday night to participate in jollying along such a popular veteran of both bicycling and motoring as this same Fred J. Wagner. In the gathering were men prominent in the sport and industry and not a few veterans of the old bicycle days gone by, all now, however, included in the motor fold. Those who could not be present sent letters of regret and there were telegrams, too, from distant points. E. E. Schwarzkopf, "Wag's" proverbial pinochle partner, started the game of jolly that was played with humor and sincerity the whole evening, concluding by the presentation on behalf of all the boys present, and some who were not, of a gold stop watch. "Wag" proved he had sentiment and not a little poetry in his composition by his "come back." Robert Lee Morrell was then installed as toastmaster, and he saw to it that the post-prandial orators had their say.

PALACE SHOW DATES SET

New York, April 28—Special telegram—The American Motor Car Manufacturers' Association today announced the dates of its next show at Grand Central palace. It will open on New Year's eve, Thursday December 31, and continue through January 7. New Year's eve is a great gala night in New York. From a selling point of view the date is considered an ideal one from the fact that during the first week of the year something like 150 big railroad and industrial corporations pay out from New York almost $200,000,000 in dividends on stocks alone, without reference to bonds, mortgages and other securities. Much of this money each year has gone into the purchase of motor cars.

SEEKS CURE FOR DUST EVIL

Washington, D. C., April 25—The subject of dust prevention, owing to its relation to road preservation, is of vital importance to the road builder. During the past few years a number of preparations for laying and preventing dust on road surfaces have appeared on the market in competition with crude materials such as coal tar and petroleum, and it was therefore decided by the office of public roads to carry on a series of experiments during the summer of 1907 with a view to determining, if possible, the relative value of these preparations and crude products and their adaptability to different conditions. The project embraced many details and, owing to lack of funds and the difficulty in finding one road suitable for all kinds of experiments, had to be somewhat modified in the final plans and the work divided among three localities.

It was learned that the highway commission of Massachusetts intended to treat a stretch of road leading into Boston with tar preparation, and arrangements were made by which the office of public roads could carry on a number of experiments on sections of this road. According to agreement, the necessary labor and apparatus were to be furnished by the commission, while the material and supervision of their application were to be supplied by the office. The road selected for the experiment was a mixed trap and granite macadam in the townships of Weston and Wayland, which had been built about 10 years previously and had but few repairs since that time. It is part of the main thoroughfare connecting New York with Boston and located about 16 miles from the center of the latter city.

The motor traffic is for this reason heavy, and this, in addition to teaming and other traffic, had produced serious results. In some cases the macadam was completely broken through. There were many rut holes, some of them 30 feet long and averaging from 1 to 3 feet in width, and a large number of smaller holes more clearly circular in shape. Over almost the road surface numerous small depressions or worn places were visible and practically all of the fine material was being removed by traffic as fast as it was formed. The No. 1 or large stones protruded above the surface, and in many cases were scattered loose, making the road extremely rough. Every rapid-moving motor car which passed would, in dry weather, raise a cloud of dust, which would be blown over the surrounding country, causing considerable annoyance to near-by dwellers as well as damage to the road.

It was thought a road in this condition would give quicker comparative results than one in better shape to start with, and for this reason it was selected, although it was fully realized the test would be a most severe one and the cost considerably above the average on account of preliminary repairs and the necessity for applying more of the dust preventive and a heavier surface dressing for gravel or screenings than are ordinarily required. Sections of this road as nearly alike as possible were selected for the experiments, which were made with water-gas tar, crude coal tar, various mixtures of the two applied in different ways, and a special coal tar product.

The water-gas tar was obtained from a local gas company at $1.50 per barrel of 50 gallons, delivered. Most of it was sent in a large tank wagon and the remainder in barrels. It was a thin, oily liquid. The crude coal tar also was obtained from a local gas company in 50-gallon barrels at $2 per barrel, delivered at Wayland. It had been produced at a comparatively low temperature and contained a good pitch base. The special coal tar product was supplied free of charge by the manufacturing company in 50-gallon barrels, the road office paying freight on it from Boston to Wayland. It contained no water, was free from the extremely volatile oils present in the crude tar, and held a good pitch base.

Labor was furnished to the highway commission under contract, the contractor receiving a stated per diem salary and a bonus of 15 per cent of the actual cost of the labor supplied. This cost per 8-hour day was $24.85. The tar was applied during the month of August and only in dry warm weather. The method in general was as follows: All loose materials, dust and detritus were first removed by repeated trips of the sweeper, just before the application of the tar. Hot or cold tar, according to the experiment, then was spread upon the clean, dry road through a hose connected to the kettle, or tank wagon, as the case might be. Laborers followed the kettle, spreading and working the tar into the road surface with a stiff, long-handled broom. As the road could not be closed to traffic, it was found necessary to throw on a light covering of gravel or screenings almost immediately in order to prevent passing motor cars from picking up the tar, although it would have been much more satisfactory and productive of better results could the tar have been allowed to dry for a number of hours before applying the surface dressing. Finally, enough of the covering material was added to take up the excess tar and produce an even surface, and the whole well rolled with a 12-ton steam roller until firm and smooth. When gravel was used it was obtained from pits located near the road and cost the highway commission about $1.08 per cubic yard, during the time covered by the work of the office. One-half inch clean trap screenings or pea stone, however, was used whenever it could be obtained and was furnished at $1.10 per ton by a rock-crushing plant located about 4 miles from the nearest section of the work.

Before the road was entirely completed it was found necessary to remove the dust and waste material which had accumulated and been swept into the gutters. This had to be carted away and dumped in convenient places near the road. It added from 1 to 1.3 cents per square yard to the total cost of treatment.

Thirteen different experiments were made, four with water-gas tar alone, three with coal tar, three with mixtures of water-gas tar and coal tar, and three with special tar preparations.

Nearly all of the sections were in good condition when they were inspected in November. It is impossible at the present time to make decided comparison of the values of the different surfacings, but undoubtedly after the cold rains and the frosts of winter, conclusions may be reached as to the worth of each one, for these agencies are the worst enemies of work of this kind. Some facts of interest have already been noted which it may be well to mention at this time. It has been shown that water-gas tar is a satisfactory dust layer and preventive when used in moderate quantities on roads already in fairly food condition. It undoubtedly can be applied to the best advantage by means of an ordinary sprinkling cart on the unprepared road, and when used in this way serves to make the road surface firm and keep down the dust for some time at a very reasonable cost. Its odor is objectionable but soon disappears. It must necessarily be applied more frequent-

SELLING POPE PROPERTY

Toledo, O., April 25—Creditors of the Pope Motor Car Co. are again on the anxious seat and are asking one another whether it is true the local plant is to be dismantled and sold piecemeal without regard for the wishes of creditors in the matter. Last Thursday the three receivers went into court and asked permission to dispose of a long list of machinery parts, lathes, shapers, milling machines, drill presses, engines and office furniture. Judge Taylor granted the permission, and the minority creditors are wondering now whether this is really the first step in a general dismantling process. The plant is furnishing employment now for about 200 men and is in daily operation. The claim is made by the receivers that there is still no intention to sell the plant piecemeal as was feared by the local creditors, but that this move is in keeping with the announced plan of the receivers to reduce the plant considerably and then sell it as a running concern.

ly than the heavier tars, owing to its lack of body. Where extensive repairs have to be made before it has but little value as a binder for the large, loose material, and whether its use even in large quantities will be satisfactory for this purpose and for holding down a heavy surface dressing is a matter for the future to decide for the road-makers.

At the present time some of the experiments with crude coal tar show up favorably in comparison with the work with special preparations, but time is needed to decide definitely upon their relative merits. As regards application, the special preparation has the advantage over crude coal tar in being less inflammable and less likely to boil over the sides of the kettle if heated too high, but, on the other hand, its cost is considerably greater. Two criticisms, which have already been offered by farmers to both of these products, are that the traction of heavily loaded wagons is increased and that in frosty weather the road is made very slippery and offers but little foothold to horses. While the mixtures of water-gas tar and coal tar, with a light dressing of traps screenings give better results in these respects, it is impossible at the present time to say that their use will prove as satisfactory or economical in the long run. A material which can be applied cold is much easier to handle than one requiring heat, but of course the latter has the advantage of containing more binding material or base. Where surface dressing is needed the use of clean ½-inch screenings is certainly to be preferred to gravel as less rolling is required and a better wearing surface is produced.

The surface treatment of roads with tar is more a palliative than a preventive of the dust nuisance. Some more permanent treatment of the road is essential.

ROAD RACE IN INDIANA

Indianapolis, Ind., April 27—The Indiana Automobile Club is arranging plans for a road race to be held here July 4. This will be the first motor road race the city ever has had and one of the first in Indiana. The race is not to be a long one—barely 4 miles—but it will be divided into a number of different events according to horsepower, price, etc. The course selected is sufficiently hazardous to make the race interesting and about half of the course is in view of the starting point. As contemplated, the course will start from Riverside park and will run to Emerichsville, returning over the Riverside boulevard. There are sharp turns, one or two good-sized hills, narrow roads part of the way and an elevated boulevard, all of which will call for some good driving. Cups running as high in value as $500 will be offered prize winners and some well known drivers from other states are expected to compete. It is planned to hold the races from 5 a. m. to 10 a. m.

NEW ROAD TAX SUITS OHIO

Toledo, O., April 25—It is thought the Boehmer act which was recently passed by the Ohio state legislature, and which greatly modifies the state highway commissioner act, will work marvels in the matter of road building in this state. The most important change which this works in the present law is in regard to the distribution of the cost. Heretofore the state bore 35 per cent of the expense, and the result was that property owners found themselves taxed beyond their ability to pay and thus it happened that in many cases the aid which was intended to work a benefit to the people was in fact a burden and in many sections roads were left unimproved because of this injustice. The state, therefore, found there was no inconsiderable proportion of the funds which had been appropriated for road-making, remaining in the hands of the state officials uncalled for, and the very end for which the appropriation had been made was defeated in some measure.

The law as now amended places upon the state treasury 50 per cent of the expense while 25 per cent is borne by the county, 10 per cent by the township, and the balance of 15 per cent is all that the abutting property owner is required to pay. An attempt was made to place the assessment upon all property within a mile each way from the improved highway, but this was defeated. The assessments will be by benefits to be determined by the township trustees.

If counties fail to ask for state aid, townships may do so. The appropriation bill as passed allows to the department the sum of $440,000, or $5,000 per county. Should any county fail to ask for aid the residue will be distributed among the other counties. The department estimates the cost of building roads in Ohio to vary from $3,500 to $10,000 per mile.

That the coming of the motor car has been responsible for much road building in this state can not be doubted. The past 10 years has witnessed more actual progress along this line than half a century previous. Nearly every county in the state has responded to the demand which has come from the motor clubs and good roads associations, with the result that from a secondary consideration the question of scientific road making has become one of great importance. The present laws can be said to be but the logical outgrowth of the needs of modern travel, which demands the best of highways regardless of cost. In every section of the state the same condition exists and the prospects are that under the new law for state aid many millions of dollars will be expended the coming summer.

Take as an example of this spirit of progress one single county and see what has been accomplished in the past few years. Paulding county is perhaps a fair criterion of what is being done. During the last 10 years the good roads movement has grown to really colossal proportions. Since May 10, 1898, bonds have been issued for pikes, or authorized to be soon issued, to the amount of $1,386,386.21, and to this must be added the interest to get at the enormous expense the county has assumed to obtain good roads. These pikes cover in all a distance of 425 miles, and they are pretty well continuous in every direction throughout the county. Pikes already built extend over 253.67 miles, pikes now building are 25.22 miles in extent, and there have been authorized 146.84 miles more. In 1898 the cost of pikes authorized was $114,878.67, while 10 years later, from May 21, 1907, to November 15, the estimated cost was $485,456.51, showing somewhat the growth of the movement.

Paulding is no particular exception to the general rule. All over the state the need for better roads has been forced upon the people. The motor car gradually has come to form an important factor in the commercial and business life of the state. It no longer is looked upon as a luxury to be enjoyed by the rich alone, but it has been utilized in many ways. The rural mail carrier has impressed it into service. Motor bus lines are springing up all over the state. A difficulty which has always confronted the traveler has been the lack of sufficient railways from north to south, and it has not infrequently happened that he has been compelled to make long, wearisome and expensive journeys over roundabout railways to arrive at a point which is only a few miles away if there were only some way of cutting across to his destination.

The motor car promises to solve this problem for the traveler. All that remains to be done is to build good roads between these points and motor bus service is almost sure to follow. Already a number of such lines have been put into operation in this state and others are to follow soon. Stated trips are being made between isolated towns, and places difficult of access, by large motor cars capable of carrying a number of passengers at a regularly fixed fare. Wherever the service has been put into operation it has proven successful beyond the hopes of its promoters. Then, too, the farmer who a few years ago looked upon the motor car as a legitimate foe has come to embrace the pleasures as well as the profits it has offered to him, with the result that hundreds of motor cars are now owned by the prosperous farming population of the prosperous state of Ohio.

The Readers' Clearing House

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems to a discussion of pertinent subjects. Correspondence is invited from subscribers and others.

GASO-ELECTRIC IDEAL CAR

Kansas City, Mo.—Editor Motor Age—I am firmly of the opinion that the ideal motor car will be one under electric control, and having given considerable thought to this proposition, I submit for publication my ideas of a perfect car for rational people. I would in no manner change a Babcock, Detroit, Baker or any other first-class electric car back of the dash, but would increase the length of the frame in front of the dash to accommodate under a hood a vertical two-cylinder air-cooled two-cycle engine of 10 horsepower connected as a unit to a direct current electric generator of proper speed and power to balance the engine. The office of this engine and generator would be only to generate electricity to charge the ten or twelve cells of high power batteries, located over the rear springs, as fast as it was used, and to supply current for lamps and engine ignition. These twelve cells when fully charged should run this car at a speed of 15 miles per hour on average roads and should run the car for 1½ hours before being exhausted and should not weigh over 250 pounds, so if for any reason the charging plant should get out of commission one could reach a repair shop without difficulty. With the engine and generator working the distance limit would be only restricted to the gasoline capacity of the tank under the driver's seat, and as the engine would be started when the car started and would run at the same even speed, adjusted to its greatest efficiency, whether the car was going uphill or down dale or was at rest, the fuel consumption would be exceedingly small. The reason I specify so small an engine and generator is that when traveling a level road or going down grade very little current is consumed and as the hills are but a small part of a day's mileage the overconsumption thereon would be quickly restored as the generator would be going at its normal speed during all conditions. A meter should be attached to the dash that would at all times show the condition of the batteries and if more current were being used than was being generated a spark and throttle control of the engine would make it always possible to increase its speed and generate current more rapidly. This car should be equipped with exceedingly long and flexible springs, shock absorbers and cushion tires of Motz, Swinehart or other good make, as, to be ideal, we must get away from tire trouble. I am confident from actual experience that a car with proper spring suspension will ride as easy and with as little injury to machinery on cushion tires as on pneumatics. This car would weigh no more than the present style of electrics as the engine and generator would certainly weigh no more than the twenty-four cells of battery we do away with. It is absurd to think that the makers of electric cars have given this idea no consideration and I hope some of the many readers of Motor Age among the makers will do me the favor to explain through these columns wherein this application is not practical. —A Much-Interested Reader.

IDEAL MOTOR CARS

Horsepower—30-35
Cylinders—Four
Wheelbase—112 inches
Springs—Semi-elliptic front, platform rear
Clutch—Cone, cork inserts
Transmission—Selective, incorporated in rear axle
Speeds—Three forward, direct on high
Brakes—Both on large drums on rear wheels, emergency expanding auxiliary, external contracting

IGNITION

Bosch—High-tension magneto and Atwater-Kent system
Two sets of plugs
Body style—Aluminum, straight line
Passenger accommodation—Five, room for two folding seats
Lubrication—Force feed, mechanical, filtered and used over

TIRES

Quick detachable.

I believe in the straight dash and sloping footboard, the body to hang low, with the frame arched over the rear axle. I like the spark and throttle control on stationary segments, on top of the steering wheel, and a rakish steering column. I like valves in the head of the motor, operated from one camshaft. I prefer an air-cooler like the Franklin.

Oklahoma City. K. H. Morse.

* * *

Horsepower—30-40
Number of cylinders—Six
Wheelbase—100 inches
Springs—Full elliptic
Clutch—Cone
Transmission—Sliding
Number of speeds—Three
Brakes—On transmission and hubs

IGNITION

Double sets
Storage batteries
Double system with magneto
High-tension magneto

TIRES

Quick detachable

Dowagiac, Mich. A. B. Gardner.

CADILLAC PLUG TROUBLE

Hartford, Conn.—Editor Motor Age—The answer to Mr. Harrington's inquiry regarding a Cadillac car in the Readers' Clearing House April 16 was particularly interesting to me in that I have driven a model H Cadillac every year since I bought it in 1903, and it runs better now than it did at first. I have had it overhauled every winter and worn parts replaced. Last summer I took it on a long trip through northern New England and a little way into Canada, making a tour of the White mountains on my way home, and though it has only one cylinder, I found that it could go anywhere that the big fellows could with their four and six cylinders, though not in so short a time. I have had the same experience with a worn piston and rings as has Mr. Harrington, and the only thing to do is to buy a new piston. It will cost $4 or $5 and the rings 80 cents apiece. If he tries to run new grooves in the old piston and make special rings, it will certainly cost more, and besides he will always have to have special rings made afterward, which will cost more than the regular ones. I have always used medium or light grade Valvoline oil in my engine, and it gives good satisfaction. The great secret of successful lubrication of this engine is to keep always enough oil in the crankcase to cover the bottom from ¼ to ⅜ inch deep. I used to take off the cover of the crankcase and measure the depth of the oil every day, but now I have a drip cock arranged in the bottom of the crankcase and I can keep the oil at the right depth without trouble. I think the popping Mr. Harrington asks about is not in the carbureter. In all my experience with the Cadillac I never have had a backfire through

IDEAL MOTOR CARS

Horsepower—30-35
Number of cylinders—Four, cast in pairs, inlet and exhaust on same side, Holley 1908 carbureter
Wheelbase—120 inches
Springs—Full elliptic
Clutch—Multiple disk
Transmission—Selective
Number of speeds—Three forward and one reverse
Brakes—Internal and external on hubs

IGNITION

Atwater-Kent system
High-tension magneto
Two sets of plugs
Body style—Straight line
Passenger accommodations—Five to seven
Lubrication—Force feed and splash
Bearings—Babbitt in engine and transmission
Ball and roller in front and rear axle
Drive—Shaft

TIRES

Quick detachable or clincher—34 by 4 and 5 inches

Middlebury, Ind. Austin O. Farver.

* * *

Horsepower—25-30
Two-cycle—Air-cooled
Cylinders—Three
Wheelbase—100 inches or more
Springs—Triple action
Transmission—Manning friction
Number of speeds—Various
Brakes—Hub and driving shaft
Drive—Shaft

IGNITION

Self-starting device
Body style—Coupe with folding rear seat
Passenger accommodation—Two to four
Kind of lubrication—Mechanical and oil mixed with gasoline

TIRES

Solid Motz non-skid

Union S. C. H. T. Yates.

IDEAL MOTOR CARS

Horsepower—30-35
Number of cylinders—Four, cast in pairs, 4¾ by 4¾
Wheelbase—110 inches
Springs—Semi-elliptic front, full elliptic rear
Frame—Armored wood single drop to allow full action of rear springs
Clutch—Multiple disk, about fifty-seven metal-to-metal disks
Transmission—Four speeds, selective type, one reverse
Brakes—Double acting on rear wheel drums. Internal expanding metal to metal. External contracting fiber

IGNITION

Double H. T. with two sets of plugs
Storage battery and Bosch magneto
Atwater-Kent system for storage battery
One set of plugs
Carbureter—Holley or Mora
Control—Spark and throttle on stationary quadrant on steering wheel. Foot accelerator
Los Gatos. Edward E. Ellis

* * *

Horsepower—50
Number of cylinders—Four
Wheelbase—126 inches
Springs—Semi-elliptic front; full elliptic or platform rear
Clutch—Multiple disk
Transmission—Selective
Number of speeds—Four forward and one reverse, direct drive on third speed
Brakes—Expanding on rear wheels; contracting on driving shaft

IGNITION

Double—Set
Storage battery with coil and commutator
High-tension magneto
Two sets of plugs
Body style—Straight line
Passenger accommodation—Seven
Kind of lubrication—Force feed

TIRES

Detachable—36 by 4 inches front; 36 by 4½ inches rear
Flushing, N. Y. F. B. O'Connor

the carbureter that I know of. In my opinion the popping is caused by the spark plug not being inserted right. The plug in this engine is a special one, about 2 inches in diameter, and if any dirt gets between the engine and the plug, or if it is not seated properly, a little space is left through which some of the exploding charge will come and make an unmistakable "pop." This is especially so when a heavy load is thrown on the engine, as in starting, or climbing a stiff grade, for then the explosions are stronger. When the engine is running light, the explosions are often not strong enough to get through the space between the spark plug and the engine as above. I shall always be glad to give any of your readers the benefit of my experience.—A Perkins.

CAUSES OF CAR SKIDDING

Chicago, Ill.—Editor Motor Age—I was very much interested in a demonstration made the other day in a four-cylinder Queen car in which the regular differential in the back axle was removed and the Le Moon axle described on page 19 of Motor Age March 19 used. The feature of the Le Moon axle as a preventive seems to be in the fact that the slow wheel does the driving. In turning a corner to the right the right rear wheel drives the car while the left rear wheel runs idle; in turning to the left the left wheel does the propelling. After the demonstration was over I spent not a little time wondering what effect driving on the slow wheel could have and remembering as I did the performance of the car on a wet pavement when at 20 miles per hour the driver zigzagged from side to side of the street without the slightest slipping whereas with a car provided with an ordinary differential skidding would have resulted. The accompanying diagrammatic drawing of a car making a corner will perhaps serve in assisting me to make my views on the matter clear. The car A moving in direction B is shown turning to the left parallel with direction G and later to take the direction F. When moving in the direction B the tendency of the car is to continue in that direction in obedience to Newton's first law of motion, to wit: "a body in motion will continue in motion in a straight line unless acted upon by some lateral force." Consequently, on reaching the corner the entire energy of the car is straight ahead in direction B, but turning the steering wheels of the car into the direction G is the force tending to take the car out of its straight line. The front wheels of the car are turned while the back wheels are continuing straight ahead in line B for a brief time. As soon as they take the direction G the left wheel running slower than the right does the work. We now come to the skidding problem. The center of gravity of the car is for convenience marked C. If the outer right wheel were driving it would be exercising its force at the end of an imaginary lever E1 of length equal to the distance from the center of gravity C to the line E, the latter line being the natural direction from the wheel before the turn was made; in spite of this turn its tendency remains for a time to follow the course E. Should the slow or inner wheel do the driving then, it exercises its force at the end of a very short imaginary arm D1 extending from the center of gravity C to the line D, which line represents the natural direction of the wheel before the turn started. A glance will show that with the outer wheel driving it tends to pivot the car at its center of gravity C and with a lever the length of the line E1 to swing the car around, pulling the rear of the car in the direction of line E. On the other hand, if the inner wheel is driving it also tends to swing the car in the direction of the line D, but as its force is acting only on the end of the short imaginary lever D1 its force to do this swinging is much less; if the center of gravity of the car was further to the rear the line D would fall right through the point C and there would not be the slightest tendency to skid. This explanation, vague as it may appear to many Motor Age readers, possesses a few features that I would like to hear discussed by other readers.—B. F. E.

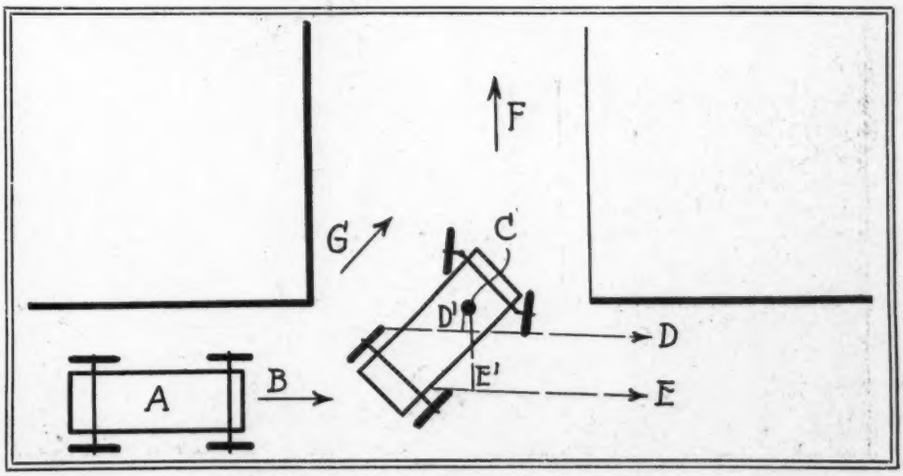


DIAGRAM ILLUSTRATING SKIDDING CAUSE ON CORNERS

SUGGESTS CAR DESIGN

Rochester, Minn.—Editor Motor Age—Inasmuch as I am one of the many who are studying the motor car a little with the intention of buying when I am sure of getting the ideal car, I make bold to give you my notions on the subject as follows:

Horsepower—40
Number of cylinders—Four
Bore—4¾ Stroke—5¾
Wheelbase—Not over 114 inches
Springs—Semi-elliptic front; platform in rear
Transmission—Sliding
Number of speeds—Three
Brakes—Two sets

JUMP SPARK IGNITION

Single or double—Double
Dry cells—Yes
Storage battery—Yes
Body style—Straight line
Passenger accommodation—Five
Lubrication—Force feed and splash
Tires quick detachable—Yes
Tire size—36 by 4 inches

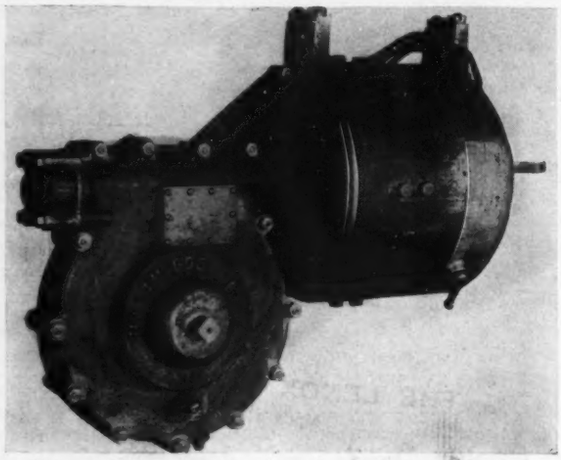
In addition to these points I would like an offset crankshaft and valves in cylinder heads; straight line shaft-drive with one universal in the drive-shaft; unit power plant on the Mora design; I beam front axle; water-cooled without fan; geared to 40 miles per hour at 1,000 revolutions per minute of the chankshaft; chrome steel throughout; throttle and spark control above steering wheel with segment numbered to show where to set levers; clutch and brake pedals marked.—E. S. Sinclair.

Motor Car Development

Maxim's Electric

HIRAM PERCY MAXIM and T. W. Goodridge, who have been engaged in the production of a new electric car at Hartford, Conn., have turned out the first one of the Maxim-Goodridge victoria phaetons. It will be seen from an examination of its construction that in several details it is a striking departure from conventional electric carriage design. The first thing which attracts one's attention in the construction is the freedom from underneath mechanism. This effect is the result of using a worm and wheel drive in place of the customary pinion and gear and sprocket and chain. The mounting of the worm drive is interesting. The electric motor has its armature shaft prolonged and the worm mounted directly upon it. The worm wheel is supported in a separate housing which is divided vertically, and attached directly to the end of the motor. The stub shafts of the differential project through this housing, as will be seen in the illustration. This drive is claimed to be the acme of simplicity, as the entire gear reduction of ten to one is accomplished in one small housing, which is virtually a part of the motor. All chains, chain housings, strut rods, adjustments, gears, pinions and gear housings are avoided, and the entire transmission made enclosed and self-contained. The worm drive is completely housed in from dust and mud, runs continuously in oil, and requires no adjustment. The worm is made of steel and hardened, and the worm shaft and motor armature shaft run on D. W. F. bearings.

Another feature in the car is the mounting of the motor and transmission. These are carried on the chassis frame. They hang just so the differential stubs, already referred to, stand in approximate alignment with the centers of the rear wheel hubs. Two universal jointed drivingshafts then connect the differential stubs with the rear wheel hubs. Up and down motion of the body is allowed for by the universal joints. For average loads these shafts are in a straight line approximately, and only on jounces and recoils is there any motion in the joints. The rear axle is offset to allow for the clearing of the universal joints, and except for this offset, is an ordinary plain carriage axle. The rear wheels run on this axle, and driving dogs engage at the outer ends of the hubs, in the same manner as in conventional floating axle design. This carrying of the weight on the springs, instead of carrying it rigid and dead on the rear axle, improves the riding of the car, and also permits the use of solid rubber tires instead of pneumatics. In riding in the car equipped with solid rubber tires, the only difference noticed, it is claimed, is that when crossing the street car tracks and similar sharp bumps, a slight noise is heard when the car lands on the other side. The riding qualities, however, are not at all different from what they would be with pneumatics, it is said, and were one deaf, it is doubtful if one could tell what kind of tires were fitted. This is the result of the long springs, and the loading of all the weight where it is supported by the springs.

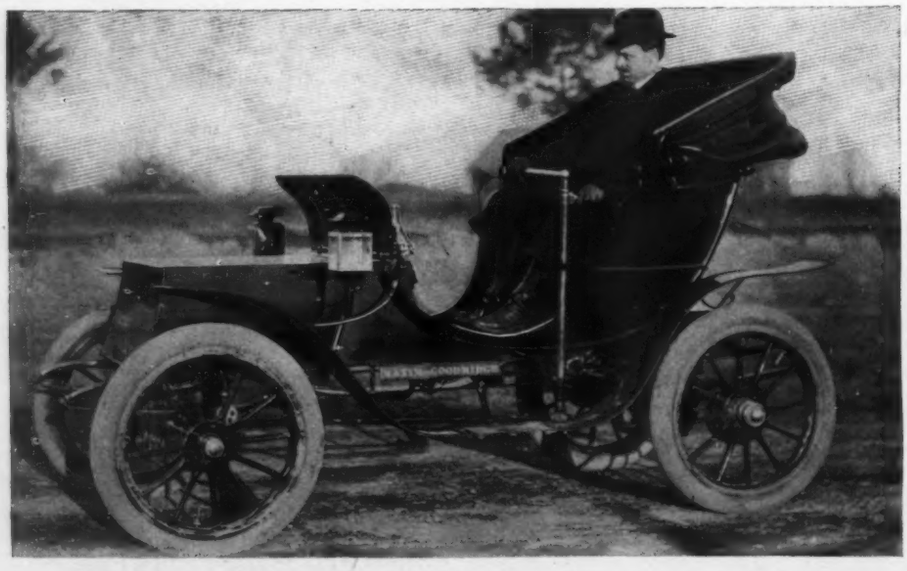


POWER PLANT OF MAXIM ELECTRIC

Another of the features of this vehicle is the method of carrying the batteries. There are thirty cells of 11 P. V. Exide, and all of them are placed in a front bonnet, the same as the power plant of a gasoline machine. The makers do not claim this arrangement is followed because it is approved gasoline car design, but because it is the best way in which the weight can be carried equally on both front and rear axles. In most types of electric cars where the batteries are carried at each end, the rear tires are required to carry some 60 per cent of the total weight, and at the same time do all the driving. In the Maxim-Goodridge car, the weight is just 35 pounds more on the rear wheels when two passengers are in the seat, than is the weight on the front wheels. This has an important effect in the softness of riding, and materially assists the tire problem, it is asserted.

The control of the car is also original. Instead of the conventional lever projecting upwards through the end of the seat cushion, and incidentally using up some 6 inches of valuable space, the controller handle is mounted upon the steering post just below the steering lever, as shown in the illustration. There are two brakes fitted, both controlled by foot levers projecting up through the floor. One brake operates upon the rear hubs, and one upon the motor shaft. The wheelbase is especially long, being 84 inches, which materially adds to the ease of riding. The wheels are 32 inches in diameter, and the tire used in both solid and pneumatic is 3½ inches.

The motor is a general electric, and the control is by means of the new-style uninterrupted torque, multiple-series controller, giving five speeds ahead and three reverse. The maximum speed is 18 miles per hour. The mileage on one charge with



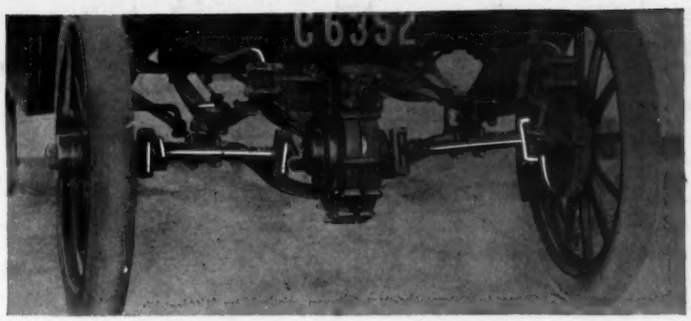
HIRAM PERCY MAXIM IN THE NEW MAXIM-GOODRIDGE ELECTRIC

either solid or pneumatic tires is 50 miles on ordinary road surfaces, and much more on good city pavement, it is claimed. The weight of the car is 2,100 pounds with the battery mentioned, and correspondingly less with smaller battery and simpler body. The chassis is entirely self-contained, and any type of body desired is supplied for especial purposes, although the standard is the victoria phaeton. In adopting the worm and worm wheel drive Maxim makes the following remarks:

"The great objection in the minds of constructors to the worm and worm wheel drive heretofore has been the question of loss, due to the working action being entirely a sliding one instead of approximately a rolling one, as in the case of gears. The irreversible feature of the usual worm also has been a hindrance to its favorable consideration. With the ordinary type of worm and wheel these objections unquestionably hold, and the drive would not be at all practical on a motor car. The requirements to ensure absolute practical qualities are not generally known, and while they are understood to be questions of tooth angle, area of tooth and materials, the builders of the Maxim-Goodridge car do not feel disposed to make public at this time the particulars of their design. That it works in a thoroughly satisfactory manner is made beyond the question of doubt, by taking hold of the car and pulling it. It is difficult to believe that a car can be moved with so little effort and so slight expenditure of power."

SUBURBAN A NEW STUDEBAKER

The Suburban, as the Studebakers have named their new four-passenger model, has ample room behind the rear seat for a trunk or hamper and if desired the rear seat can be readily removed. This arrangement makes the car convenient for beach wagon service or for fishing or camping trips or for conveying luggage to a summer resort. The chassis is identical with that of the regular Studebaker 30-horsepower touring car.

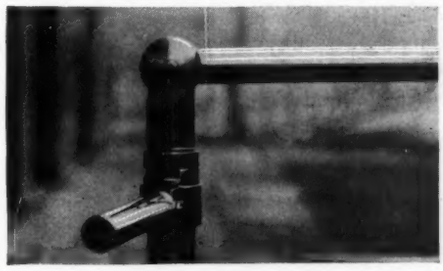


SEPARATE SUPPORTING AND DRIVING AXLES

Motor Literature

James A. Rose, secretary of state of Illinois, has issued a paper-covered volume containing a list of all the motor cars registered in the state of Illinois. This list gives the numerical order in which licenses are issued, the address of the person getting the license and the name of the car.

The Continental Caoutchouc Co., New York city, is circulating a large poster in colors on its Ready-Flated tires. The scheme is unique, consisting of a pastoral tract with a roadway leading into the foreground. The background represents the landscape on fire and as if speeding therefrom along the roadway there is the figure of a woman representative of speed resting on a tire, supposed to be traveling on the road.



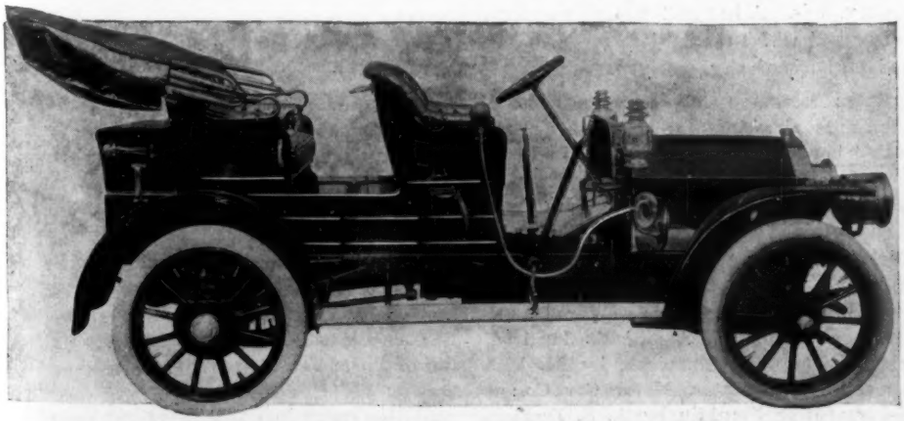
MAXIM'S SIMPLE CONTROL

The present Michelin tire poster, which is finding its way to all parts of the country, has "Speed" as its chief feature, securing this effect first by showing a racing car traveling at speed on a curved road, and again by means of an express train crossing a viaduct, which passes over the road upon which the motor car travels at a fast pace.

F. W. Ofeldt & Sons, Nyack-on-Hudson, New York, are mailing a four-page pamphlet on which are illustrated and described steam cars they have for sale.

"The Gas Engine," by Frederick Remson Hutton, and from the press of John Wiley & Sons, New York, has been recently issued in its revised third edition in the form of a 600-page cloth-bound volume, well illustrated and arranged. This book is a treatise on car design and construction and does not assume the form of a year-book illustrating different types of cars. As its name suggests, it treats of the gas engine, and divides this treatment into twenty-one chapters, some of which are as follows: Liberation of heat energy; mechanical energy from expansion of gas and air; the heat engine cycle; gas engines burning gas; gas engines using kerosene oil; gas engines using gasoline; alcohol engines; proportioning of mixtures; carburation and carbureters; ignition; cooling; the combustion chamber and the exhaust; theoretic analysis of the gas engine; and experiments with explosive mixtures. As an example of the book, the chapter on carburation will serve as a specimen. This deals with the surface carbureter, the wick carbureter, illustrating half a dozen styles of it; the old types of gauze surface carbureter; deals extensively with the float carbureter; carbureters for motor cycles; alcohol carbureters, and illustrates a great many typical makes. The chapter on ignition gives several wiring diagrams, explains the make-and-break system and refers to hot tube ignition. The chapter on theoretical analysis of the gas engines covers 140 pages and gives curves and formula in explanation of the different phases. The chapter dealing with tests of gas engines is also made valuable by the presence of results and curves showing these results.

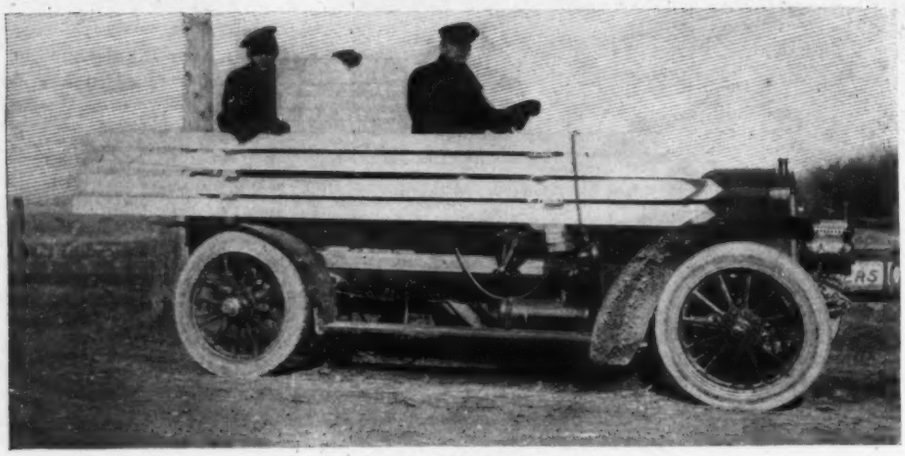
Physicians in all parts of the United States are now co-operating with Thomas B. Jeffery & Co. in the preparation of a special physician's number of the Rambler magazine, which will appear on the first of May. This number will be written, edited and profusely illustrated by the efforts of American doctors who have used the Rambler in their practice for years. The magazine will contain many unbiased articles prepared by physicians for the benefit of fellow members of the profession who may be considering the purchase of cars. Physicians who have used the Rambler will discuss methods and their success in this special number of the Rambler magazine. Doctors can procure free copies of the Rambler magazine from Thomas B. Jeffery & Co., Kenosha, Wis.



SUBURBAN ROADSTER, A NEW STUDEBAKER MODEL

From the Four Winds

N S E W



SIGNBOARD CAR OF CINCINNATI AUTOMOBILE CLUB

Cedrino Star Attraction—Cedrino will give a 25-mile exhibition in his Fiat in Baltimore, May 30, in connection with the races on that day under the auspices of the Motor Car Racing Association, at the Pimlico track.

Hower After Scorchers—A special police committee, composed of members of the Automobile Club of Buffalo, has been appointed by President Frank B. Hower of that organization. The committee will assist the local authorities in suppressing reckless driving in Buffalo. The action of Police Justice Nash, of that city, in fining each reckless driver arrested $50 is heartily commended by Buffalo motorists.

Hartford Lays Out Route—The contest committee of the Automobile Club of Hartford, of Hartford Conn., has decided on a definite course and schedule for the forthcoming endurance run. The following schedule has been adopted: Start at club quarters, Hartford; first control, to Middletown, distance 15 miles, running time 40 minutes. Middletown, second control, to Southington, 15 miles, running time 40 minutes; Southington, third control, to Waterbury, 11 miles of hard going over the Southington mountain, running time 35 minutes; Waterbury, fourth control, to Bristol, 17 miles, running time 50 minutes. In this stretch the long Plymouth hill is to be negotiated. Bristol, fifth control, to Farmington, 14 miles, running time 40 minutes. Farmington, sixth control, to Hartford, 15 miles, running time 50 minutes. The total running time for the course, that is, two circuits, is 8 hours 40 minutes. Checking stations will be established at Meriden, Thomaston, New Britain and at West Hartford. Two circuits of the route make approximately 175 miles. After the first time around cars may stop at the Hartford control for 10 minutes to take on gasoline, oil and water without incurring a penalty for stopping the motor, which is necessary in some of the smaller cars. It is noteworthy that this schedule has been laid out by the committee so the average speed called for under practically all conditions is but 20.4 miles an hour, or nearly 5 miles per hour less than is allowed by law.

Nazzaro Beaten—Isottas driven by Trucco and Minioa, respectively, ran one, two in a 20-kilometer road race at Padua, Italy, in which Nazzaro in a Fiat was third. Trucco's time for the 12.5 miles was 9 minutes 7¾ seconds; Minioa's 10 minutes 5⅖ seconds, and Nazzaro's 13 minutes 13⅖ seconds.

Napier Shows Great Speed—A 90-horsepower six-cylinder Napier, driven by Newton, made a successful attempt upon the flying half-mile at Brooklands April 5, establishing a new record at a speed of 102.85 miles per hour. The previous record, set up by Resta in a four-cylinder 90-horsepower Mercedes, was exceeded by 7 miles per hour.

Interests the Farmers—The Commercial Club of Ripon, Wis., is going right after the good roads question. It has been decided to offer cash prizes for the best and second best ½-mile stretches of country roads built by farmers in Fond du Lac county, Wis. A banquet was given to the farmers at which the subject was broached and enthusiastically received.

Enter Baltimore Test—Maryland motorists are manifesting a great interest in the sealed bonnet contest to be held in Baltimore Saturday, May 2. Twenty cars thus far have been entered. Inquiries have been received from Philadelphia, New York, Washington, Harrisburg and Wilmington. Wallace C. Hood, of the Motor Car Co., of Washington, has entered a 60-horsepower Thomas. Among the local entries are two Winton sixes, by M. Williams, of the Winton Motor Car Co.; a 20-horsepower Franklin by A. S. Dowler; a 45-horsepower Royal Tourist by the Royal garage; a 50-horsepower Pope tourabout by the Callahan-Atkinson Co.; a six-cylinder Pierce-Arrow by the Southern Auto Co.; a 20-horsepower White steamer by George L. Evans; 1907 and 1908 models by the White company; 24-horsepower and 14-horsepower Maxwells by the Lambert company.

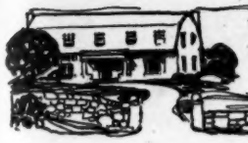
Cincinnati Erecting Signs—The Cincinnati Automobile Club is engaged in carrying on its signboard work and already has men at work putting up the tags. William Hulvershorn is in charge of one of the rigs, which carries from ten to twelve poles, signs and all necessary tools.

Hoosiers Capitulate—Owners and dealers of Indianapolis are hurrying to pay the annual license fee of $3, which the courts recently held valid. After a talk with their attorneys in which they were told an appeal to the Indiana supreme court would be expensive and possibly unsatisfactory, motor interests have decided not to carry the test case higher. The decision will add about $2,700 a year to the city treasury which is supposed to be used in street maintenance work.

Another Office for Gallaher—The Motor Union of Great Britain and Ireland has established an office in this country. The representative appointed is E. B. Gallaher, manager of the American branch of the Maja Co., at 228 West Fifty-eighth street, New York city. The main value of membership in the British organization is service in conection with touring abroad. Mr. Gallaher has also been for 2 years the representative in this country of the Touring Club of France and the Swiss Touring Club.

Denver Plans a Test—G. A. Blanchard is promoting a 300-mile race which he designates the Rocky mountain endurance contest, which is open to stripped stock cars and which he intends running over the Colorado roads early in June, the entry list closing May 9 or 16. The chief prize is a $500 cup and half the entry fees. Blanchard claims he already has assurances of the entries of a Colburn, two Thomases, a Jackson, Locomobile, two Studebakers, a Wayne and a Stanley.

Osborne I. Yellott Injured—Osborne I. Yellott, counsel for the Automobile Club of Maryland, was burned about the face and hands while repairing his car. In moving about he broke a gasoline pipe, and the vapor dripping on his face and hands spread to a lamp which exploded. It is not thought that Yellott's sight will be impaired, as he closed his eyes just as the explosion occurred. Skin may have to be grafted over the burns on his face and hands. If this is necessary his friends may be called upon to give the needed cuticle to the injured man.



News from the Motor Clubs

Glide Club Bills Runs—Ten runs are scheduled for this summer by the Glide Club of Peoria, Ill., three of them being 2-day affairs.

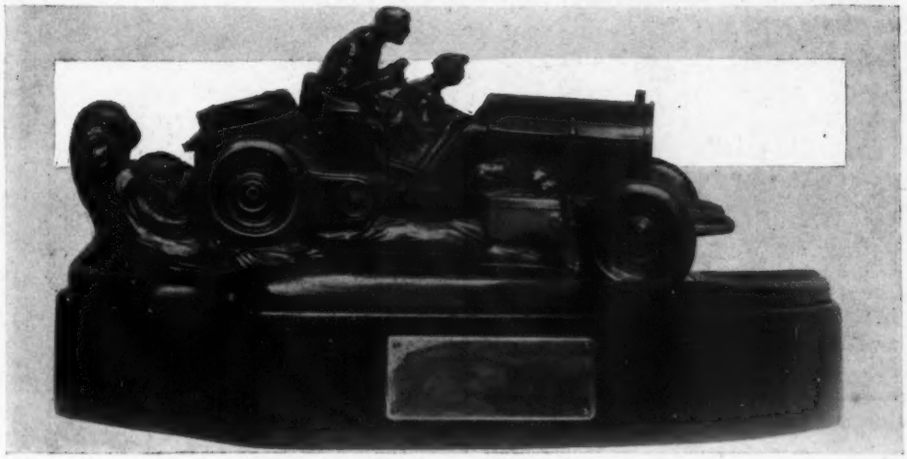
Armitage Assistant Secretary—At the regular monthly meeting of the board of governors of the Rhode Island Automobile Club, Alfred Armitage was elected assistant secretary to take the place formerly occupied by F. D. Fiske. F. M. Barber is the nominal secretary, but all the work of the office has been placed in the hands of Mr. Armitage.

Virginians Start State Body—The Virginia State Automobile Association was organized at a meeting of members of the Tidewater Automobile Club of Norfolk and the Automobile Association of Richmond. The new association will take in all the principal cities of the state. Officers elected were Joseph E. Willard, president; Abbott Morris, vice-president, and Otis M. Alfriend, secretary and treasurer.

Trophy for Hartford—One of the most beautiful and artistic trophies is that presented to the Automobile Club of Hartford by Albert M. Kohn, of the house committee of the club. It is a bronze reproduction of a racing car and is of French make. The car is shown rounding a sharp turn at high speed. The trophy is one of the several to be contested for by the entrants in the forthcoming endurance run of the Automobile Club of Hartford, which will be 175 miles in length and taking in some of the worst as well as best roads in the state.

Gorham Succeeds Van Sicklen—Sidney S. Gorham, who served four terms as secretary of the Chicago Automobile Club, has been chosen again to fill that important position. He is to serve the unexpired term of N. H. Van Sicklen, who succeeded him last fall. Members of the club will take a 25-mile jaunt to the Moraine hotel in Highland Park, a north shore suburb, about the middle of May. This will be the first run of the season. It has been decided that it will be impracticable to hold a 24-hour race as early as Decoration day, the time suggested for the club's proposed reliability contest. Manufacturers have promised to support the race if it is held later in the season.

Pike Campbell, President—George H. Wilson, president of the Louisville Automobiling Club for 4 years, has retired, Pike Campbell succeeding him. The other officers elected at the annual meeting were: First vice-president, J. H. Ross; second vice-president, J. B. Lewman; secretary, Eugene Strauss; treasurer, Walter Kohn. Prince Wells was elected a director in the Kentucky State Automobile Association. W. O. Barvice, who is a member of the board of park commissioners, promised to use his best efforts toward securing for motorists their rights in the parks. An effort will be made to have the toll rate on the Kentucky and Indiana bridge reduced. A tour to Frankfort for the annual meeting of the state association is favored.



KOHN TROPHY OFFERED FOR HARTFORD RELIABILITY RUN

Trojans Form Club—The Automobile Club of Troy has effected a preliminary organization at Troy, N. Y., and chosen the following officers: President, Frank B. Twining; vice-president, E. S. Platt; secretary and treasurer, Alonzo McConihe. They and the following will make up the board of directors: G. A. Cluett, LeGrand C. Cramer, H. S. Ide, John McGlynn, J. J. Murphy, R. C. Reynolds, John Squires and Dr. L. R. Whitney.

Will Reorganize Akron Club—Members of the Akron Automobile Club have resolved to reorganize the club at Akron, O. A meeting for this purpose is to be called soon. A year ago there were fewer than 300 owners in this city, but now there are more than 400. The first run of the Cleveland Automobile Club will be to the lakes, south of Akron, which will bring a big crowd of Clevelanders. Accommodations are being arranged for at the lake hotels for the run, which will take place early in May.

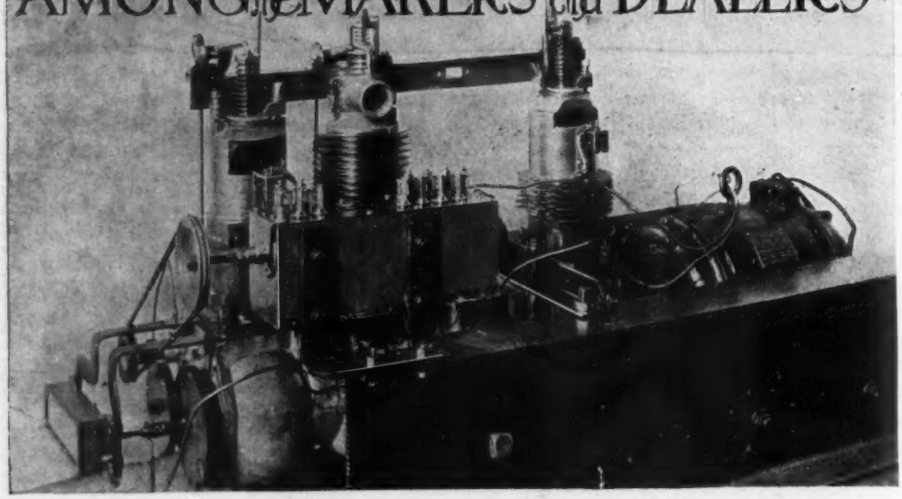
North Jerseymen Hold Election—George A. Post has retired from the presidency of the North Jersey Automobile Club, and Robert Beattie, of Little Falls, has been chosen to his place. The other officers elected at the annual meeting were: First vice-president, Dr. J. H. Faulkner; second vice-president, Benjamin Eastwood; secretary and treasurer, James Madden, Jr., of Little Falls; captain, Dr. George E. Layton; first lieutenant, W. B. Froude, of Bogota; counsel, Jacob Vanderclock. It was decided to hold an endurance run on Saturday, May 16, consisting of four laps of 25 miles each, the contestants entering the suburbs of Paterson on each lap of the half-journey around the clock.

Kankakee in Line—The Kankakee Motor Club of Kankakee has been organized, the organization having for its purpose a co-operation with similar organizations elsewhere for the securing of legislation favorable to motoring. The following officers were elected: President, H. A. Magruder; vice-president, Louis Beckman; secretary-treasurer, Dr. C. K. Smith; chairman of membership committee, F. D. Martin; trustees, George Fortin, A. J. Brown, F. D. Martin, Henry Volkmann.

Is a Growing Club—The Springfield Automobile Club, of Springfield, Mass., is growing so fast it was discovered at the regular monthly meeting that it was entitled to an extra representative in the Massachusetts State Automobile Association and the club's choice for the place was F. G. Jagar. A. E. Lerche also was elected to representation on the lists of the state association to succeed A. E. Corbin, resigned. Members of the club were warned through the club officers to look out for traps, which have been established in various parts of the city by the authorities of Springfield.

Holds State Election—At the second annual meeting of the board of directors of the Connecticut Automobile Association, held at New Haven, Conn., W. F. Fuller, of Hartford, was re-elected president and G. K. Dustin, of Hartford, secretary for the ensuing year. Dr. Hertzber, of Stamford, was elected treasurer of the association. Mr. Dustin was authorized to make such visits as he deemed necessary in the interests of the reorganization to towns throughout the state. During the meeting the new organized Automobile Club of Willimantic was elected to membership in the state association.

AMONG the MAKERS and DEALERS



IMPACT MACHINE IN USE IN FRANKLIN FACTORY

May Move to Marshall, Mich.—The Marvel Automobile Co., of Detroit, Mich., is considering a proposition to remove its plant to Marshall.

Meteor Agencies—New agencies for the Meteor have been established this week with the Howard Motor Car Co., Des Moines, Iowa, and Davenport Cycle and Auto Co., Davenport, Iowa.

Monarch Agent in Minneapolis—The Monarch Motor Car Co., Chicago Heights, Ill., announces it has recently opened an agency in Minneapolis under the management of V. E. Segerstrom.

Wells in Washington—The list of motor car dealers in Washington, D. C., has been augmented by George Wells, who has opened a garage and salesroom at 1333 Fourteenth street. He will handle the National car and Royal motor cycle.

New Concern in Buffalo—With a capital of $15,000 the Economy Automobile and Garage Co., of Buffalo, has been incorporated. The directors are James L. McCrane, Charles A. Streeburg, Augustine B. Fowler and Arthur L. Dixon, all of Buffalo.

Big Car Again on Road—The Warner Instrument Co., of Beloit, Wis., has sent out its giant Autometer and will show the product in the east. The car covered 10,000 miles last year and expects to go 15,000 miles this year. The entire equipment has been renovated, and is now resplendent in a new coat of gold and enamel. More than $200 worth of gold leaf was placed on the big meter alone.

Boosting Fairbanks—The Maxwell-Briscoe Motor Co., which recently occupied its new plant at Newcastle, Ind., is becoming Hoosierized rapidly. Some 2,000 Hoosiers expect to attend the national convention at Chicago to do what they can toward having Charles W. Fairbanks nominated for president and the Maxwell people, in answer to a request, have promised to have enough cars on hand to take care of all Hoosiers attending the convention. Furthermore, the company is having 40,000 booklets printed with pictures of Fairbanks on the outside covers.

Now a Thomas Salesman—Charles H. Strieby, president of the Philadelphia Ford Motor Club and formerly connected with the Ford branch in the Quaker City, has joined the sales force of the L. J. B. Co., Philadelphia agent for the Thomas.

Handling Apple Devices—The Dayton Electrical Mfg. Co. announces the election of Major R. L. Hubler as secretary and general manager of the company. W. D. Brown will continue to act as manager of sales and R. F. Sutliffe as purchasing agent. The manufacture of the line of Apple ignition apparatus will be continued by the company.

Brock Again With Autocar—Marcus I. Brock will assume the general management of the sales departemnt of the Autocar Co., in which connection he will have the assistance of both H. M. Coale and F. G. Browning, who have long been connected with the company. Mr. Brock is no stranger to the Autocar Co. or its dealers, having spent 3 years with that concern prior to December, 1905, in charge of its sales department, severing his connection at that time to become the assistant general manager of the Association of Licensed Automobile Manufacturers in New York, which office he recently resigned.

Flag for Stoddard Factory—That labor and capital can go peacefully hand in hand was exemplified on April 17, when the employes of the Dayton Motor Car Co. presented to their employer the flagstaff and beautiful flag which waves proudly and triumphantly over the new concrete building, which has gone up in the last 6 weeks, following the fire that threatened the Stoddard-Dayton plant. The gift was a voluntary one on the part of the employes, no one in the office knowing of the plan until the flag was ready. George Harrison, executive officer of the flag committee, presented the flag and staff to the company. J. W. Stoddard, president of the company, received the gift and showed clearly his appreciation in thanking the men.

Lutz Closes Store—Owing to ill-health John Lutz, who has been the Oldsmobile agent in Washington, D. C., has been compelled to close his salesroom at the corner of Fourteenth and R streets. The Oldsmobile is not at present represented in Washington, but several dealers are negotiating for the agency.

Building Prest-O-Lite Plant—The Prest-O-Lite Co. is beginning the erection of its new Indianapolis plant for the manufacture and compression of acetylene gas, as required by a recently-enacted ordinance. It will be a small concrete building located at River avenue and White river and will cost about $1,500. The big $20,000 plant recently completed on South street is to be used for storage and office purposes.

Bus Line Proposed—The Pattersonville, Rotterdam and Schenectady Transportation Co. is considering the plan of running a motor car stage in and out of Schenectady, N. Y. The directors believe that the line will prove a profitable venture. Two cars, a twenty-passenger and a twelve-passenger delivery combination, may be bought at a cost of $7,000 and a garage and waiting room probably will be built at Rotterdam junction.

Franklin's Impact Machine—Laboratory testing of factory materials and products is a comparatively recent development in motor car manufacture, and has produced some remarkable devices and methods. One of these is the impact machine, which has been designed by the engineers of the H. H. Franklin Mfg. Co. By this device are tested the various kinds of metal stock which enter the factory, and the concentric valves which are an important feature of the Franklin motor construction. Tests are of two kinds, tensile and fracture. In the former, specially turned rods of the metal to be tested are attached at the top to a valve stem in the machine, with a block screwed to the lower end. The machine is driven rapidly by an electric motor, forcing the block violently up against a stop-piece until the rod breaks. In the latter a small disk of the metal is fastened to the valve stem and pounded against a flange in the top of the cylinder until it is fractured. The concentric valves are pounded, when in place in the top of one of the dome-head cylinders, until they break down. The value and importance of the laboratory work in which the impact machine plays a part is well illustrated by the experience of the Franklin company with the concentric valve, who say when this valve was designed 2 years ago and first tested in the laboratory it would stand only 5 minutes pounding. This same valve has since been running perfectly on the road in a motor car for 2 years. Metallurgists were set to work on special alloys,

heat-treating and tempering baths, with the result that the concentric valve in the 1908 motor car will stand from 8 to 10 hours' pounding.

Record Week for Thomas-Detroit—The E. R. Thomas-Detroit Co. reports that last week's business broke all records this season in the number of orders received. One telegraphic order alone was for six cars for San Francisco. Business all along the coast is flourishing, it is reported. Chicago is absorbing a good many Thomas-Detroit Forties and New York and Boston are both in a fair way to exceed their allotments, it is said. The factory is working day and night to keep up.

New Denver Agencies—The following new agencies have been established in Denver since the first of the year: A. T. Wilson, Earl; Denver Omnibus and Cab Co., Corbin; Tobin Motor Car Co., Peerless and Fritchle electric; Havens Motor Car Co., Dorris; Wood, Erickson & Trimble, Mason and A. B. C.; W. R. Covington, Aerocar; H. A. Trinkle, Brush; Denver Auto Co., National; Donaldson Motor Car Co., Gaeth, Regal and Cameron; Denver Motor Car Co., Ford. Denver now has twenty-six motor car agencies, representing forty-seven factories.

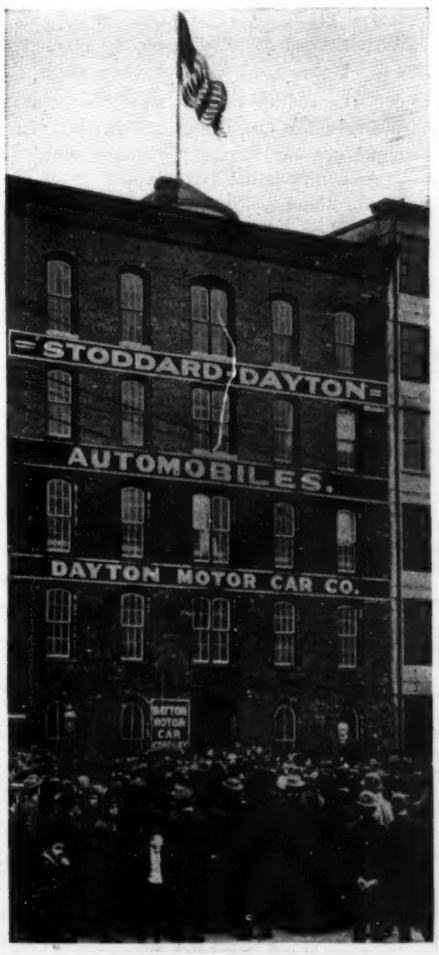
Will Make Soule Rig—The Anthony-Hatcher Co., of Grand Rapids, Mich., has been formed for the purpose of manufacturing motor cars, trucks and parts, general machinery and tools and to buy and sell all kinds of personal property. Those interested are George E. Anthony, William A. Hatcher, George Clapperton and Charles M. Owen. The capitalization has been placed at $20,000, of which $12,000 has been subscribed and paid in property. The motor car portion of the enterprise is the exploitation of the Soule delivery wagon now being manufactured in Kalamazoo.

Winton's 1909 Policy—Alexander Winton, president of the Winton Motor Carriage Co., announces that his company will continue the manufacture of six-cylinder cars exclusively in 1909. "Our decision to make sixes and sixes only for 1909," says Mr. Winton, "is not based on any personal predilection. Our company, like other motor car companies, is in business to make what the public wants, and our experience in the manufacture and sale of the Six-Teen-Six is conclusively convincing that the public is rapidly coming to acknowledge that every claim of advantage put forth for the six is true and can be demonstrated as true. Our experience as manufacturers covers single-cylinder cars, double-cylinders, fours, sixes and eights, and there is no more doubt in our minds that the six is superior to all the rest than that the sun is more brilliant than the moon. In addition to the fact that the six is the least expensive car in its after-cost, we are convinced, not only by personal experience, but also by the testimony of Six-Teen-Six buyers, that for sweetness of running, flexibility of motor and general efficiency the six is the master car. And because it is the master car we shall produce only the six for the 1909 market."

Jackson Sole Owner—D. M. Jackson is now the sole owner of the Warren garage, at Warren, Pa. This was formerly run under the co-partnership of Jackson & Cross, but Cross has withdrawn.

Morley Has a Nucleus—Bert S. Morley, Abbott and Seventh streets, Detroit, Mich., has the Michigan sales department of the Ferro Foundry and Machine Co., Cleveland, O., and is arranging with manufacturers for additional lines.

Offering Premiums—The Maxwell-Briscoe Motor Co. states it received a telegram last week from the Fernald Auto Co., its Denver agent, offering $50 per machine for a two carload shipment—twelve Maxwells—conditional on shipment being made within 10 days. "Nor is Denver the only place that is crying for cars. The demand is simply phenomenal," says Benjamin Briscoe. "I don't know whether we are doing all the business, but I do know we are producing 50 per cent more cars this year than last and we simply can't keep up with the demand. A few days ago we got a telegram offering $500 premium for one carload of six machine—a bid that outdoes Denver. Of course we cannot comply. To do so would be to work an injustice on the other agents, so each must take his turn. We've put our night forces on at all three factories and hope to catch up in that way soon."



FLAG-RAISING AT DAYTON

Start a Paint Shop—W. S. Ward and A. L. Hall, who have until recently been connected with the paint shop of the Dragon company's Philadelphia factory, have established a shop of their own at 1304-06 Pearl street, Philadelphia.

Thayer Sole Proprietor—H. A. Thayer announces that the Thayer Automobile Co., of Marinette, Wis., has been dissolved and that he is the sole proprietor of the Rambler garage, which will occupy the same location as the old concern.

Drown in New Place—John Wilson Drown, formerly manager of publicity of the Pope Mfg. Co. and the Corbin Motor Vehicle Corporation, has accepted a like position with the Standard Roller Bearing Co., of Philadelphia, and entered upon his new duties this week.

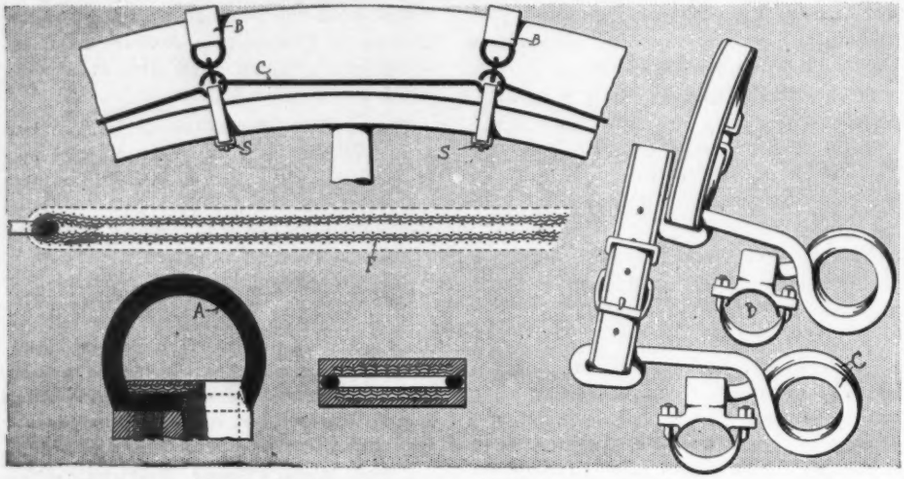
Using Water Power Electricity—The Auto Body Co., the New-Way Motor Co., with the Beilfuss Motor Co. and the Ideal Motor Co., of Lansing, are now being operated by water power electricity, the power being supplied from Grand river by the Michigan Power Co.

Tennessee Has a Factory—The Southern Motor Co., with a capital stock of $50,000, will occupy the building opposite the Southern Boiler Works, on Royal street, in Jackson, Tenn. Behind the new venture are many of the most prominent business men in Jackson. Motor cars, motors and gasoline engines will be manufactured and sold by the concern. The charter of the new company has been filed in the registrar's office and the building is practically ready for occupancy by the company.

Making Fire Apparatus—The third company to manufacture motor car fire apparatus, has been organized in Indiana. It is the Webb Motor Fire Apparatus Co., which has $100,000 capital and which will build a big plant at Vincennes. Fire engines, chemical apparatus, hose wagons and carts, hooks and ladder trucks, etc., will be manufactured, all to be motor-driven. The Howe Engine Co. and the Pope Motor Car Co., both of Indianapolis, are other concerns that manufacture horseless fire apparatus in the state of Indiana.

Bus Company Reorganizes—The Auto Transit Co., of Philadelphia, which operates the Broad street omnibus line in that city, has been reorganized and in the future will be known as the Autobus Co. The capital stock of the new company is to be $1,000,000, and the stock of the old concern will be exchanged share for share for that of the new. It will also have an issue of $150,000 6 per cent collateral trust bonds, of which $100,000 will be sold at once, the proceeds to be used for the purchase of twenty new buses, in paying the floating debts of the company, and to provide additional working capital.

Development Briefs



ELASTIC NON-SKID DEVICE AND THOMAS UPTHROW SPRINGS

NON-SKID CHAIN SUBSTITUTE

While courts and tire chain makers have been wrangling over using chains for anti-skid purposes on boulevards and in parks, the Elastic Non-Skid Co., Chicago, Ill., with whom is associated B. F. Swinehart and S. Furmidge, one well-known in the rubber trade, the other associated in spring manufacture, has been bringing out a non-skid, consisting of rubber and fabric bands B carried transversely on the tires, these bands taking the place of the usual chain and having the claimed advantage of preventing skidding and at the same time possessing the inherent advantage of not injuring the streets. Each rubber band is approximately 1½ inches wide and ½ inch thick and 6½ inches long. In each end of the band is a D-hook A, around the flat portion of which the fish lining fabric F is looped as illustrated, the rubber being molded around the fabric and ring and forming the completed strip. The several transverse bands are secured by a linked chain on either side of the tire, together with straps attaching to the links of the chain and spanning the wheel rim.

SLAMA TIRE PROTECTOR

With a view of placing on the market a tire protector that will prevent skidding as well as reduce rubber wear, the Slama Tire Protector Co., Kansas City, Mo., has brought out the Slama protector which is a basket-work steel covering for the entire tire, which differs from several others in that it is not anchored to the rim or spokes at any point. The cover armor consists of rows of four-arm cross-shaped links that are arranged symmetrically across the tread and circumferentially of the tire cover. These cross-shaped pieces are held together by square links; and at the point marked A is the only place for unhooking these links from one of the hooks of the cross pieces.

SWITCH WITH GOOD FEATURE

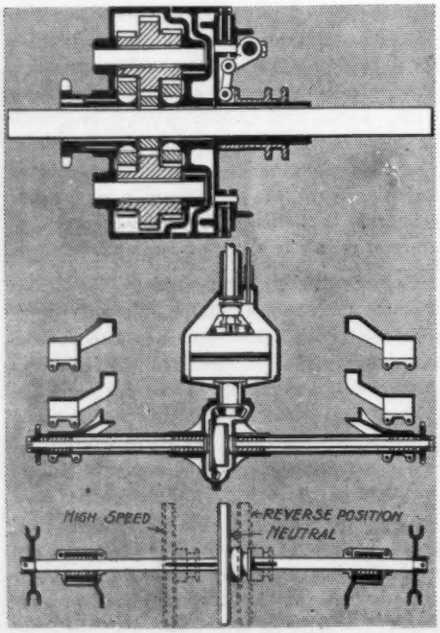
Marketed by the Ideal Switch Co., of Plainville, Conn., the Ideal switch used for double-ignition systems for battery or magneto, or double sets of battery, is herewith illustrated, the view at the left showing the assembled switch; that at the right with a blade off, and the center one the lever and blade. The feature of the switch is that when the blade is in place, on either battery or magneto, it is held tightly within a spring contact, making it difficult to work loose. It practically is self-locking in these contact posts. Another point in connection with it is that it has a contact point marked "off," which may be used in connection with the ground wire of a high-tension magneto.

REPAIR BLOCK FOR CHAINS

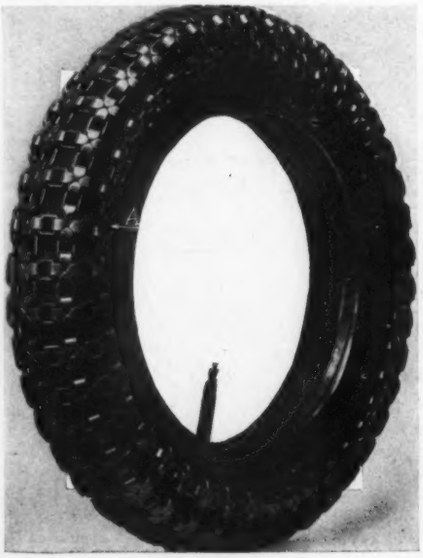
To facilitate the repairing of driving chains, the Diamond Chain and Mfg. Co., Indianapolis, Ind., has brought out its repair block, which, as illustrated, consists of a three-toothed piece A resting upon a U-shaped support S. When the chain is positioned as shown in the illustration both rivets can be removed by tapping the heads of hammers, the repair-block offering a solid support for this. Should the old link be used again, it is but necessary to put the link and sidebar back into place and hammer out the rivet end.

MAKING MOTOR PARTS

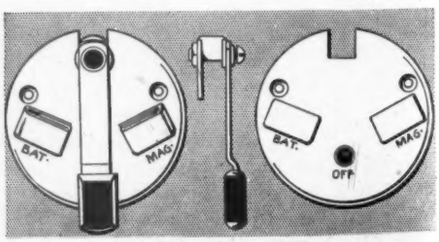
The High Wheel Auto Parts Co., Muncie, Ind., manufactures a line of motor buggy parts well suited for motor buggies, which includes jackshafts, steering devices, control levers, brake drums, rear wheel sprockets, pivot and other type of axles, complete rear axle, etc. In addition to this, the company handles two-cylinder opposed air-cooled engines, planetary gear-sets with disk clutch and other equipment. The countershaft is made in no fewer than twlve styles, and the hangers supporting this shaft on the body frame are adjustable in order to facilitate the assembling of a car, which will allow for a variation in frame width of from 18 to 32 inches.



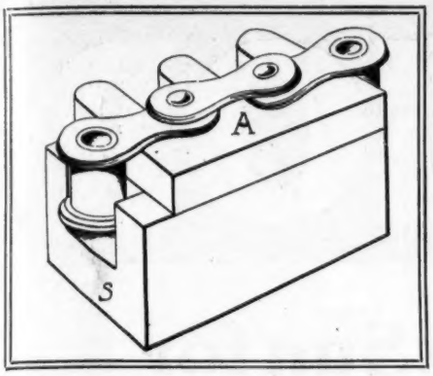
HIGH WHEEL CO.'S PARTS



SLAMA TIRE PROTECTOR



THE IDEAL SAFETY SWITCH



DIAMOND CHAIN REPAIR BLOCK

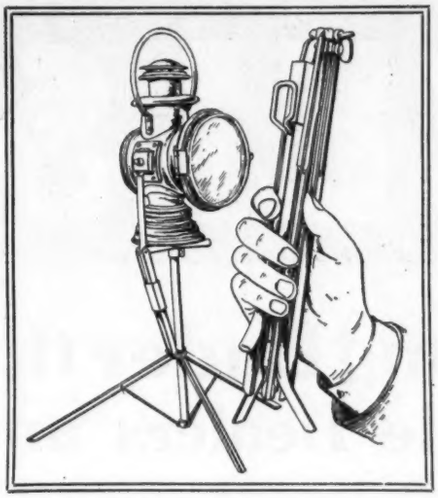
Because the tubular housing is clamped by the hanger, the countershaft can be turned to any desired angle. One of the countershafts is designed for engines mounted transversely in front, allowing of a direct connection by shaft through the planetary gearset, thence by double gear to the countershaft. With this style a subframe is not required for supporting the gearset, and the entire planetary set is housed in a dust and oil-proof case. One of the other styles of countershafts for motor buggies, with the engine placed lengthwise under the body, is designed to be driven by chain from the planetary gearset. Still another style of countershaft is made specially for cable-driven motor buggies, in which a slackening on the pedal will relieve the driving engagement sufficient to allow a slip on turning the corner. The gearset is carried in a case made without joints and without a bolt or screw to work loose. The high-speed clutch is a three-disk member, in which a ring is clamped between fiber plates. Six small springs between the fiber plates cause a ready disengagement when the clutch is thrown out. This clutch is separate from the transmission and could be used in a flywheel in case a sliding gearset was desired. Four styles of steering devices are manufactured.

UPTHROW CUSHION SPRINGS

The Thomas Spring Works, Canisteo, N. Y., manufacture simple coil springs which are used for retarding the recoil or up-bound of a car body. Each spring consists of a double coil C, one end of which is fastened to a bracket B clamped around the axle, the other end is looped and takes a leather strap passing over the frame. The drop in a body has no effect on the springs, the strap merely bending to take up the drop, but on the recoil the entire tension of the spring acts to retard it. The steel in the coils is from $\frac{9}{16}$-inch up to $\frac{3}{4}$-inch, according to the weight of the car. The action of these springs does not begin until the car rises above its normal height on the regular springs.

BURNETT MAKES SPRINGS

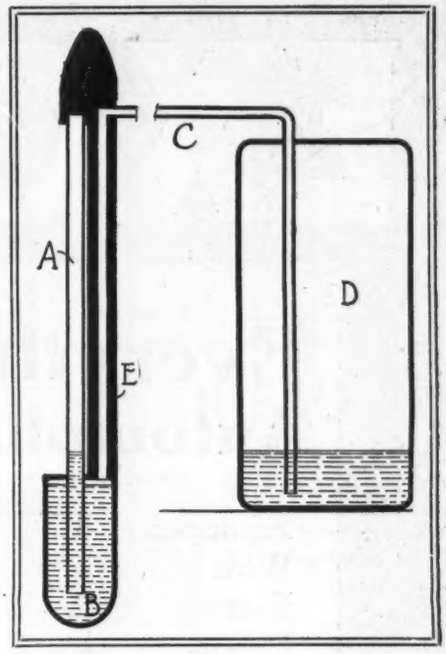
Manufactured by the Burnett Compound Spring Co., Newark, N. J., the Burnett compound spring is designed to do away with shock absorbers. In its design are used what appears to be two full elliptic springs, an upper and a lower one, with the bottom of the top one and the top of the bottom one made with single leaves A together with two short leaves B on top and bottom secured by adjustable clamp C. By moving these clamps in or out, the flexibility of the spring can be regulated as desired. The theory of the working of this spring is that it comprises relatively stiff outer members and relatively weaker inner members, which are arranged so the adjacent inner halves are more flexible to take up slight loads; whereas, the outer halves come into use for the heavier work.



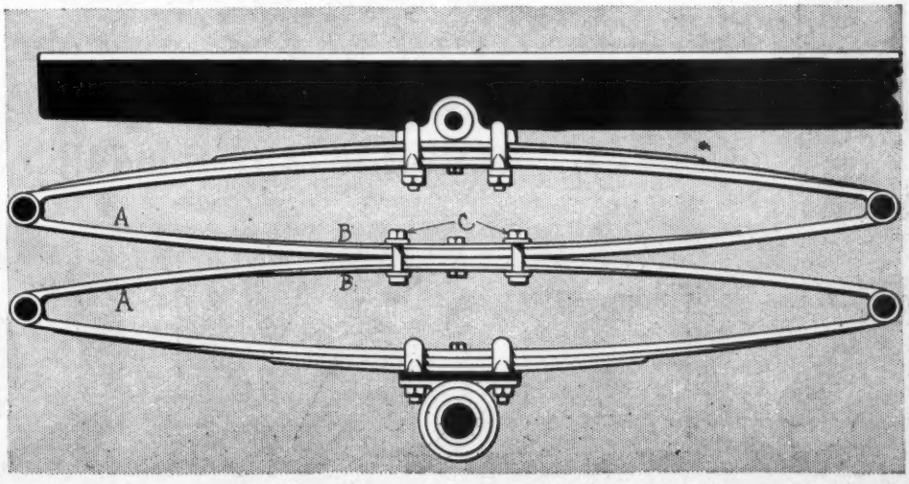
BELOIT LAMP STAND

TWO USEFUL ACCESSORIES

The Beloit Supply Co., Beloit, Wis., markets a couple of useful accessories for motor cars. One of these is a tripod lamp-holder, designed to hold an oil lamp while the driver may be making a repair about the motor. The tripod consists of the usual spreading feet, together with a stand on which the lamp rests, and a swinging arm is inserted into the socket used for supporting the lamp on the dash. When not in use the tripod can be folded most compactly and carried in an ordinary toolbox. The other device is the Lipman tank gauge for indicating the amount of gasoline carried in the tank. This device, illustrated diagramatically, is a vertical glass tube A carried in the brass frame E on the dash; the bottom of the tube is open and enters a small chamber B, which has open connection with a tubing C passing to the base of the gasoline tank, irrespective of where the tank is carried. The chamber B is filled with a red liquid, whereas the tube C is filled with air. Filling the gasoline tank D creates a pressure on the air in the tube C, which, transmitted to the surface of the liquid in the vessel B, forces it to rise in the tube A. This tube A is separately graduated for each car; the graduation being such that with the gasoline tank empty the colored liquid is not visible in the tube A. After the gasoline tank B is filled, the height of the liquid in the tube A is indicated. For all other gasoline levels in the tank D the standing of the liquid in the tube A is directly fractional of the height it stands with the tank filled.



LIPMAN GASOLINE GAUGE



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